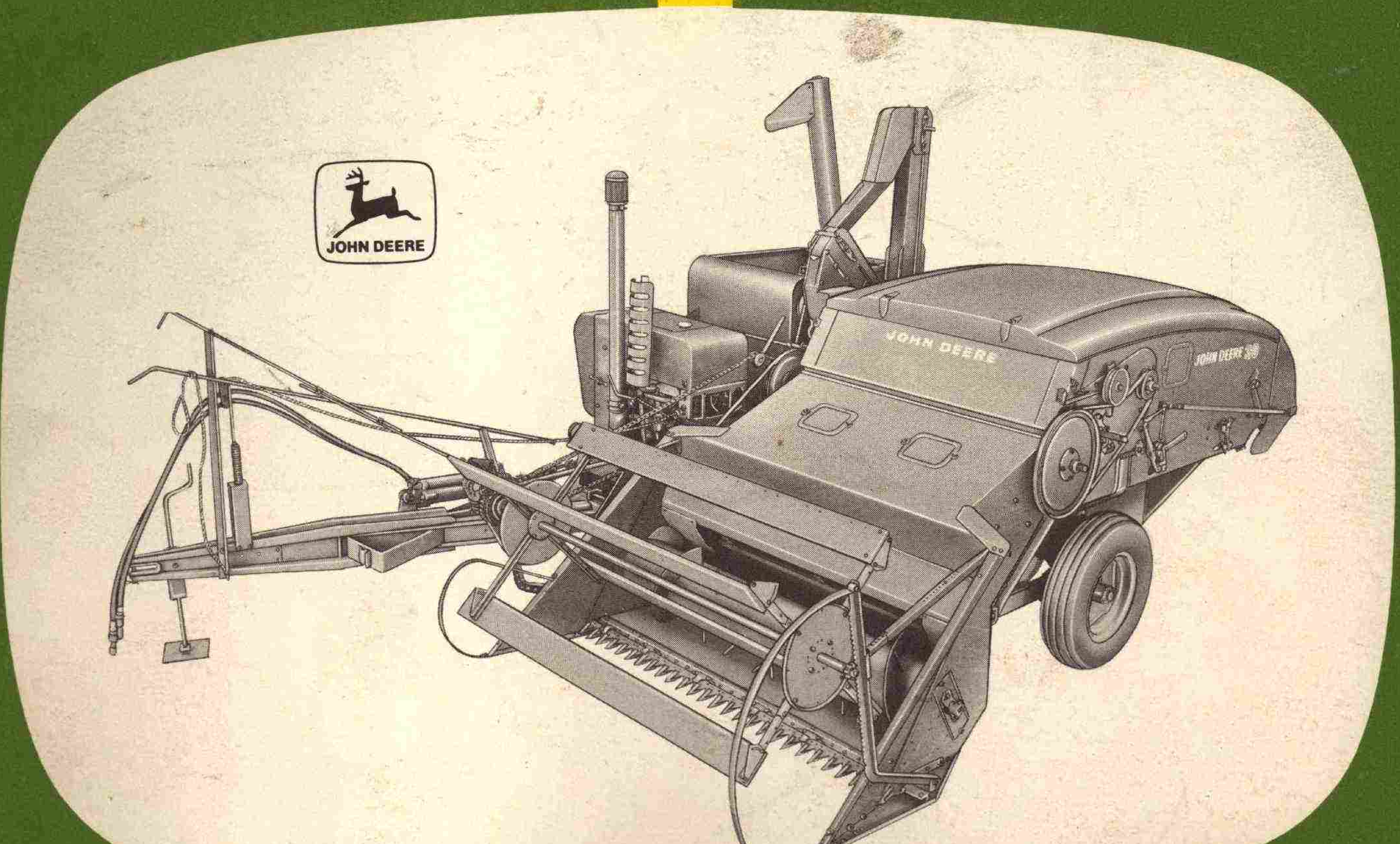
OPERATOR'S MANUAL

OM-H61-1159

JOHN DEERE

30

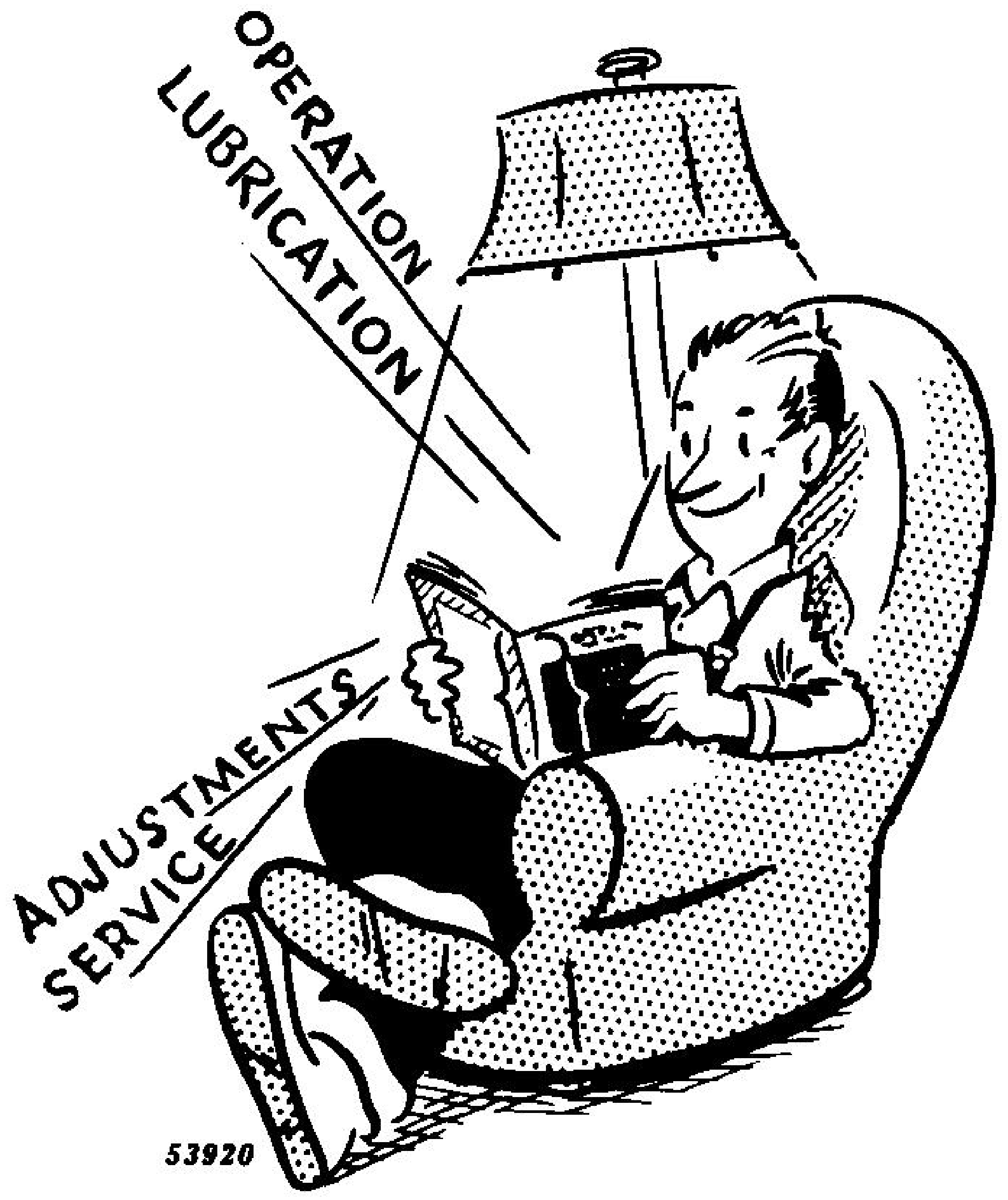
COMBINES



• FOREWORD •

The combine you have just purchased was designed and manufactured to the traditional high quality standards of all John Deere Farm Equipment. We are confident that you will receive years of dependable economical service from your John Deere 30 Combine.

This manual has been carefully prepared and illustrated to provide you with the necessary information to hook up, adjust, service, lubricate and operate your new John Deere 30 Combine to best advantage.



Read and Study This Manual Carefully. Keep It in a Handy Place and Refer to It Often.

A combine must be constructed to harvest in a wide range of conditions. Average conditions can be handled by the standard equipment with which the combine is shipped. However, unusual conditions may require some special equipment.

The information given in the Manual will afford a clear understanding of the fundamentals of combine harvesting. **The proper use of these fundamentals to suit the condition in which the combine is operating is up to the operator.**

Conditions vary, not only from year to year and section to section, but also from field to field. It is, therefore, obviously impossible to give definite rules for combine operation that will directly apply in every case. It is entirely possible that there are several solutions to any particular threshing problem. For this reason, we give numerous suggestions, some of which may conflict; you can use the one that best suits your needs.

It is often necessary to settle on a compromise of adjustments to save the maximum amount of the crop. To illustrate, in a trashy condition where a large volume of straw stems, weed joints, etc., is being delivered to the cleaning unit along with the grain, it is advisable to open the chaffer and sieve a little wider and accept a slightly dirtier sample rather than to close the chaffer and sieve and receive a cleaner sample but allow too much grain to pass out of machine with the blanket of trash.

If you should find that you require information not covered in this manual, consult your John Deere dealer. He will be glad to answer any questions that may arise regarding the operation and service of the combine. He has trained mechanics who are kept informed on the best methods of John Deere Combine servicing and can give you prompt know-how service in the field or in his shop.

Should your combine require replacement parts, go to your John Deere dealer where you will receive Genuine John Deere Parts—**accept no substitutes.** John Deere parts are made to fit properly and insure satisfactory service because they are made from the original patterns and from the same material as used in new machines.

LOCATION REFERENCE

"Right-hand" and "Left-hand" sides are determined by facing in the direction the combine will travel when in use.

SERIAL NUMBERS

Record the serial number of your combine (and engine if so equipped) in the spaces provided below.

The combine serial number is stamped on the name plate, located on the right-hand side of the separator just above the tailings auger.

The engine serial number is on the engine name plate, located on the front of the engine just above the crankcase oil level gauge.

Combine Serial No...........................

Engine Serial No...........................

Date Purchased..........................

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I GOT MY COMBINING DONE ON TIME
POP
POP
48678

Because the first thing **every day,** I

√ Lubricated the combine properly.

√ Made the proper adjustments for the crop and field conditions.

THESE DAILY PRECAUTIONS WILL INSURE GOOD PERFORMANCE AND LONG SERVICE.

SPECIFICATIONS

Distance Between Divider Points.	84 in.
Length of Cutter Bar	78 in.
Right- or Left-Hand Cut	Left-Hand
Cutter Bar in Front or to Side of Cylinder	Front
Type of Platform	Hinged
Range of Cutting Height	1-1/2 in. to 30 in.
Type of Conveyor	Conveyor Chain
Reel Drive	Ground-Driven
Reel Adjustable from Tractor Seat	Yes, on Power-Controlled Reel
Number of Slats on Reel	4 Slats *(Six or Eight Slats Optional)*
Type of Cylinder	Rasp-Bar
Width of Cylinder	60 in.
Diameter of Cylinder	15 in.
Speed Range of Cylinder	430 to 1685 rpm
Type of Separation	Unit Rack
Length of Separating Surface	76 in.

(Measured in a straight line from center of cylinder shaft to point of discharge of straw.)

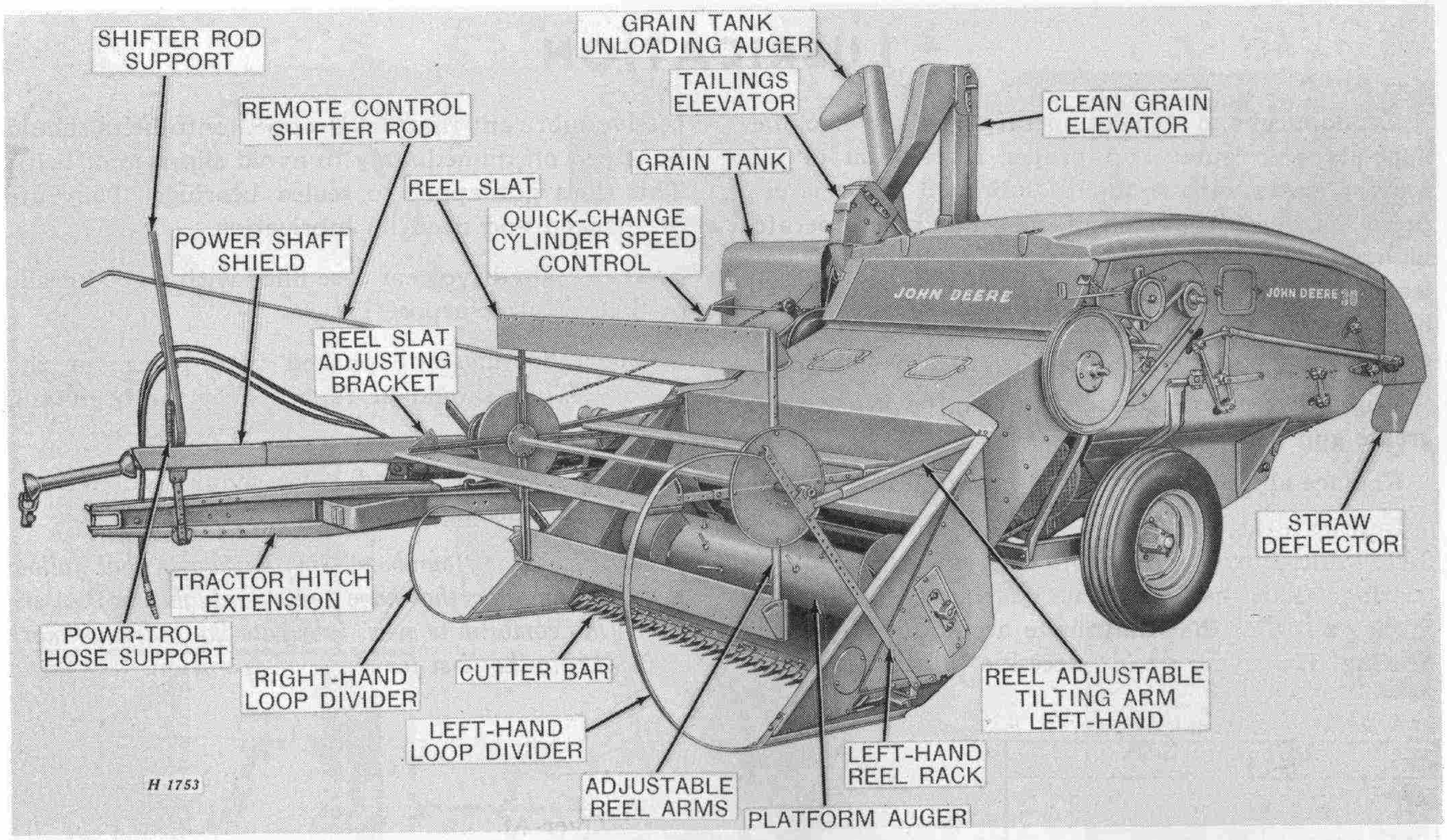
Width and Length of Chaffer and Cleaning Sieves	36 x 34 in.
Width of Separator, Rear	60 in.
Recleaner Available	Yes
Type of Drive	Power Take-Off or Engine
Drive to Cylinder	V-Belt
Number of Wheels	2
Tire Size	7.50 x 16
Wheel Tread—Center-to-Center at Ground Line—Wheels Dished Out	105 in.
Cylinder Bearings	Sealed Ball
Fan and Beater Bearings	Sealed Ball
Wheel Bearings	Tapered Roller
Length Over-All (With Tractor Hitch Extension)	19 ft., 4-in.
Width Over-All	10 ft., 11-1/2 in.
Height Over-All	9 ft., 2 in.
Capacity of Grain Tank	25 bu.
Shipping Weight, Standard Equipped	Approx. 3800 lbs.

(Specifications and design subject to change without notice.)

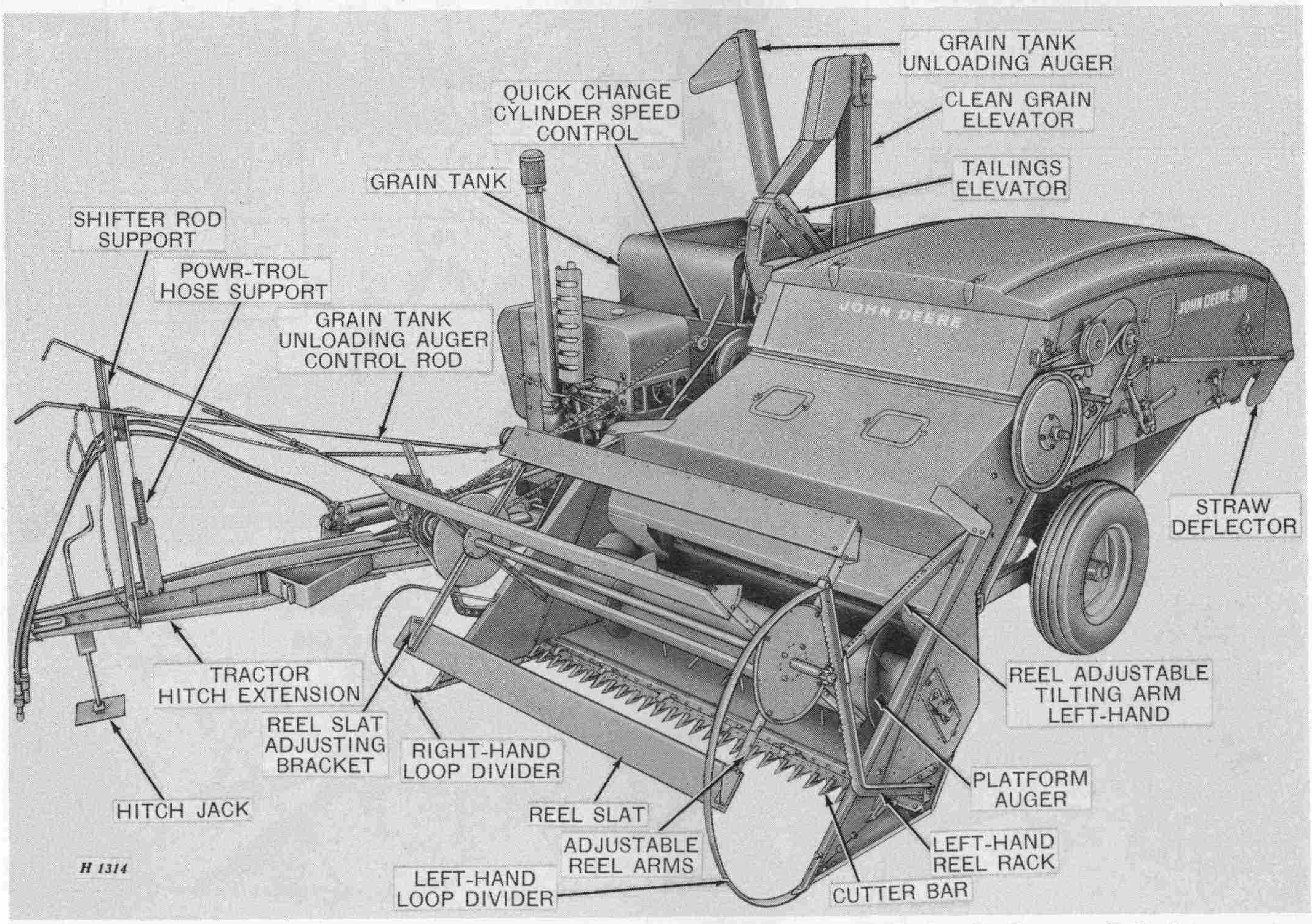
Keeping your equipment in proper adjustment will help to keep it operating efficiently and economically.

BE SAFE

It pays to be careful,
It costs to be careless!



John Deere 30 Combine—PTO-Driven Grain Tank Machine



John Deere 30 Combine—Engine-Driven Grain Tank Machine with Hydraulic Remote Cylinder

LUBRICATION

Economical and efficient operation of any machine depends on regular and proper lubrication of all moving parts with a quality lubricant. This is especially true of farm equipment which must operate in hot, dusty conditions over rough ground. Neglected lubrication quickly leads to reduced efficiency, heavy draft, wear, breakdown, and costly replacement of parts.

Wipe dirt from grease fittings and nozzle of grease gun before greasing.

Replace all missing grease fittings immediately.

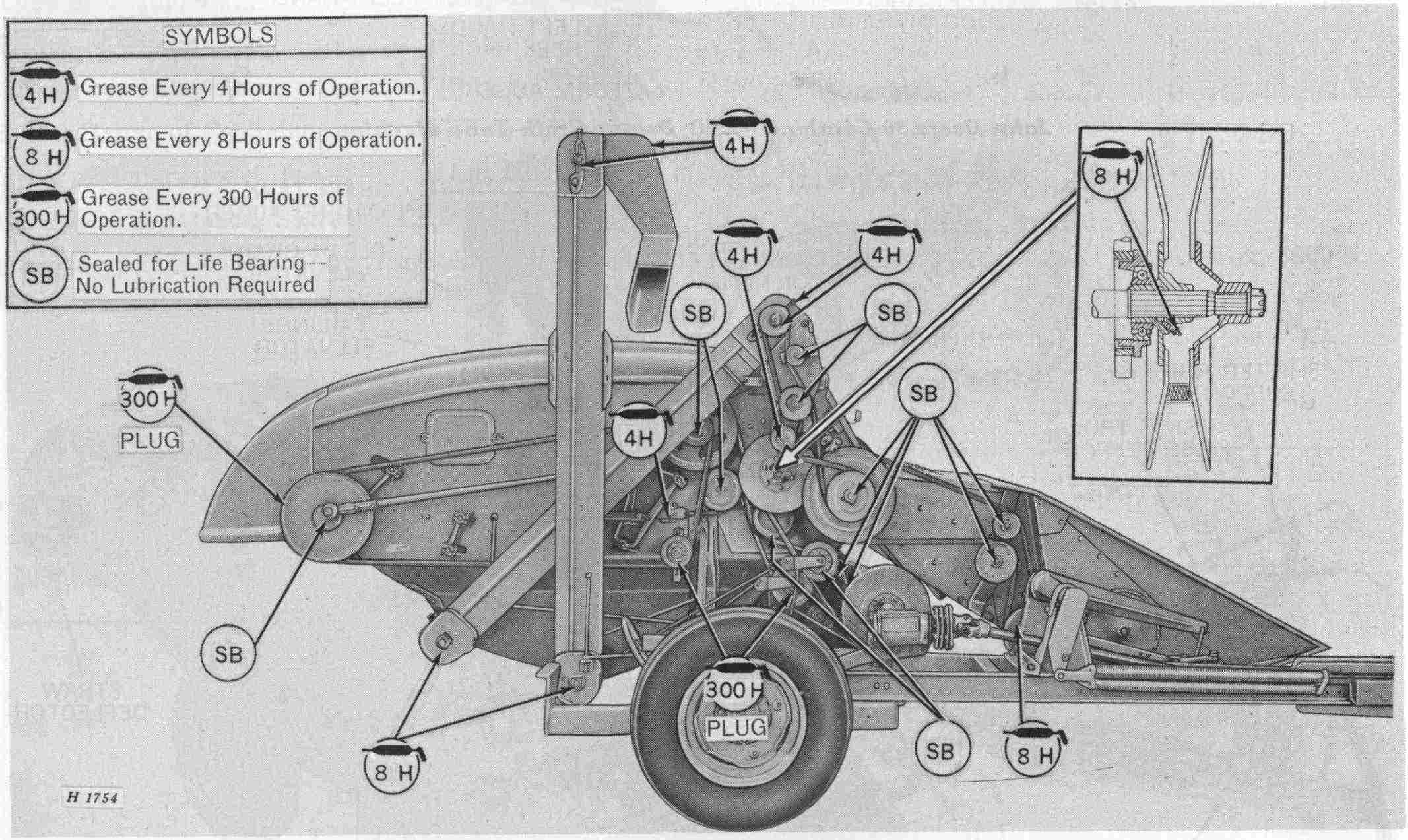
Lubricate at all grease fittings thoroughly, with SAE Multi-Purpose grease, until grease oozes out of bearing. This assures that bearing is full, also flushes out dirt that may have accumulated in the bearing. However, avoid excessive lubrication. Excessive lubricant that has dropped onto belts should be wiped off immediately to avoid slippage of belts. This does not apply to sealed bearings. They are pre-packed and need no lubrication.

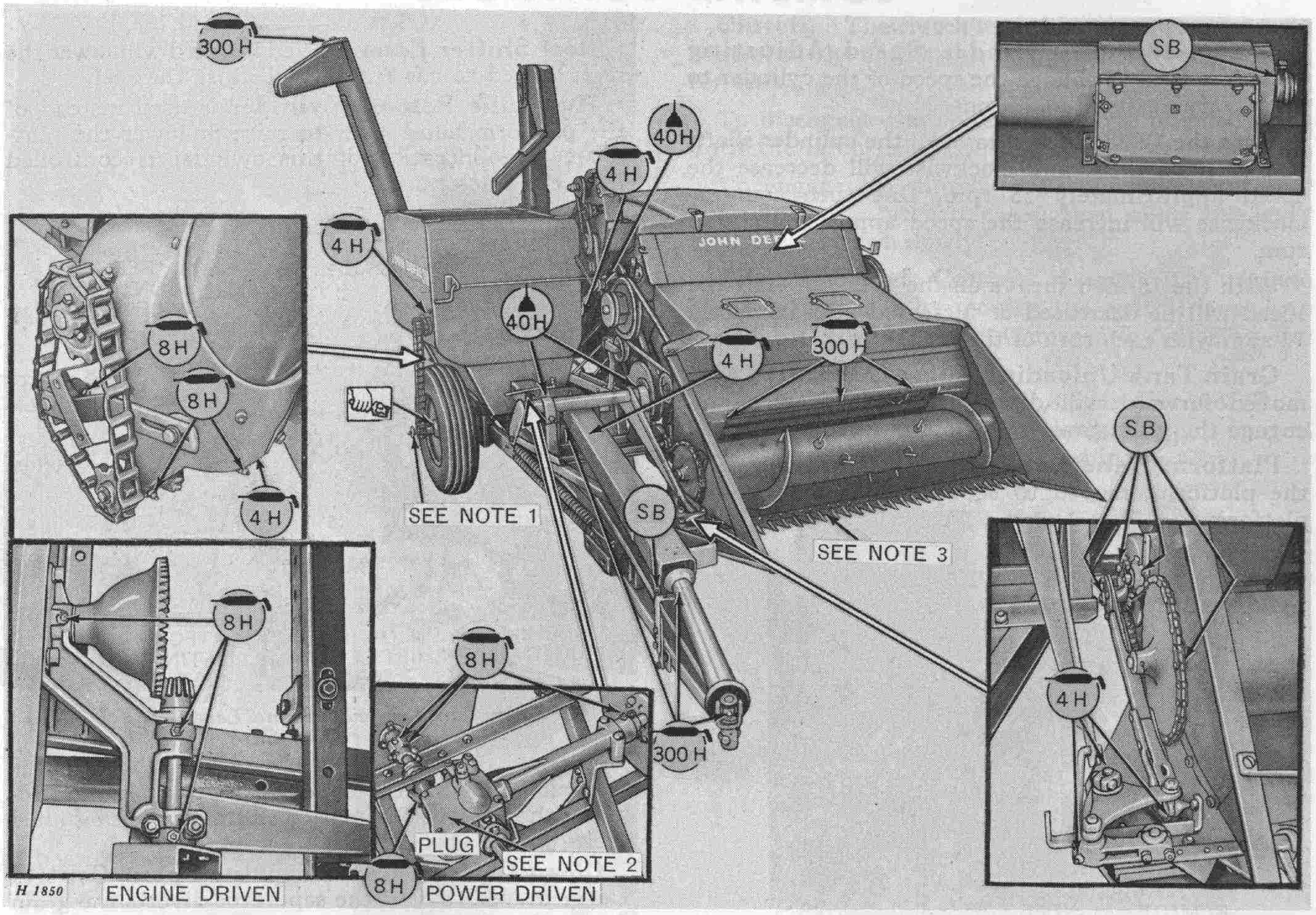
Keep main drive gear case filled with a good grade of SAE Multi-Purpose grease.

Wheel bearings are packed with grease at the factory. They should be repacked at the beginning of each season.

Chains, sprockets, and knife should be oiled except when working in sandy soil conditions.

NOTE: The "symbols" on the charts that follow apply to combines that have been thoroughly broken in. When the combine is new, lubricate the bearings more often during the first few days of operation.


SYMBOLS
4 H Grease Every 4 Hours of Operation.
8 H Grease Every 8 Hours of Operation.
300 H Grease Every 300 Hours of Operation.
SB Sealed for Life Bearing — No Lubrication Required
4H
8 H
4H
4H
SB
SB
SB
300 H
PLUG
4H
SB
300 H
PLUG
SB
8 H
8 H
H 1754



SYMBOLS

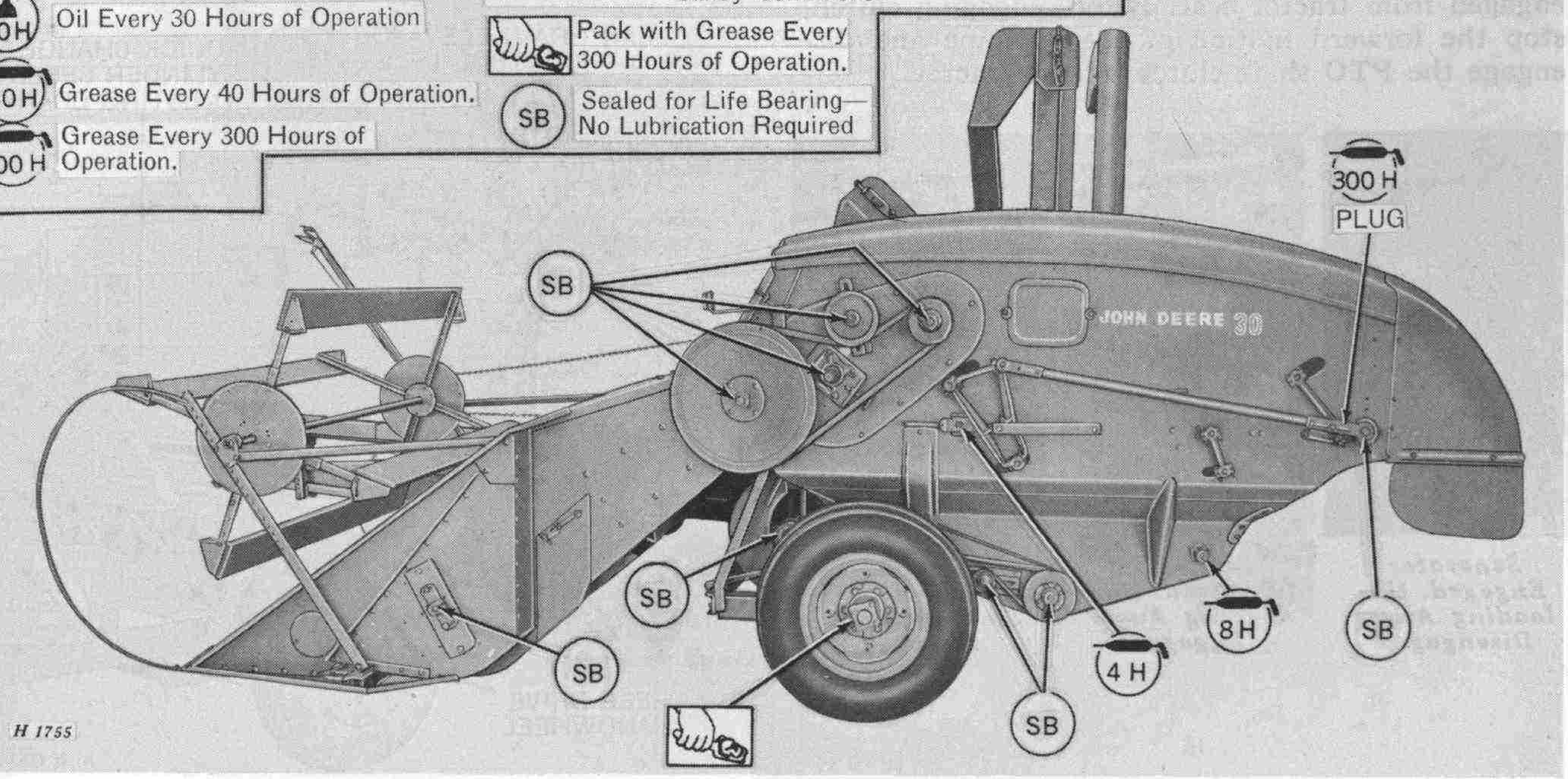
4 H	Grease Every 4 Hours of Operation.
8 H	Grease Every 8 Hours of Operation.
30H	Oil Every 30 Hours of Operation
40H	Grease Every 40 Hours of Operation.
300 H	Grease Every 300 Hours of Operation.

Note 1—Grease Every Time Combine Is Transported.

Note 2—Check Gear Housing. Keep Filled to Capacity with SAE Multi-Purpose Grease.

Note 3—Keep Oiled Except When Operating in Dry, Sandy Conditions.

	Pack with Grease Every 300 Hours of Operation.
SB	Sealed for Life Bearing—No Lubrication Required



COMBINE CONTROLS

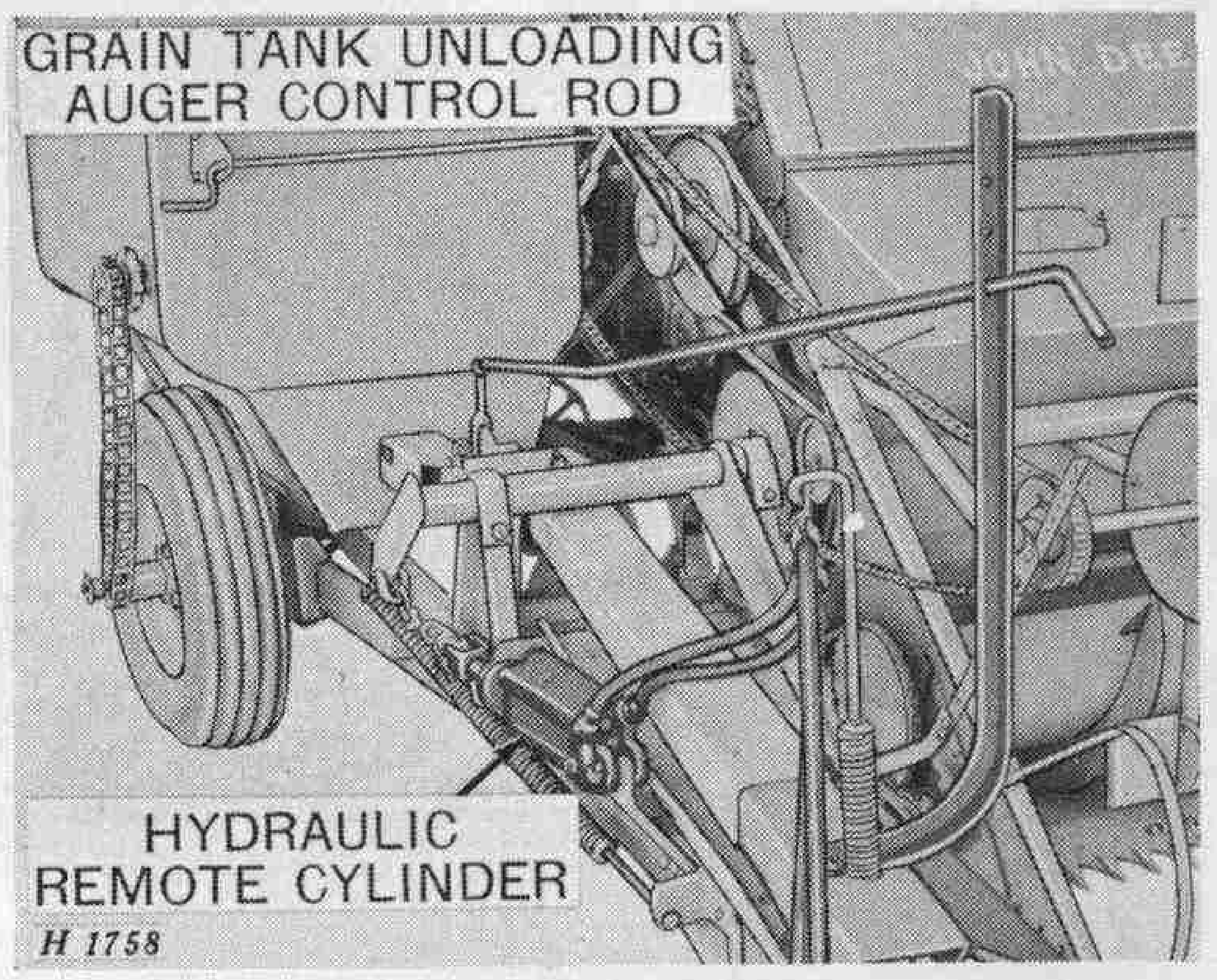
Quick-Change Cylinder Speed Adjusting Crank is used to change the speed of the cylinder to meet varying field conditions.

With the 12-3/4-inch sheave on the cylinder shaft, one turn of the crank clockwise will decrease the speed approximately 25 rpm. One turn counter-clockwise will increase the speed approximately 25 rpm.

With the 15-inch sheave on the cylinder shaft the speed will be decreased or increased approximately 12 rpm with each turn of the crank.

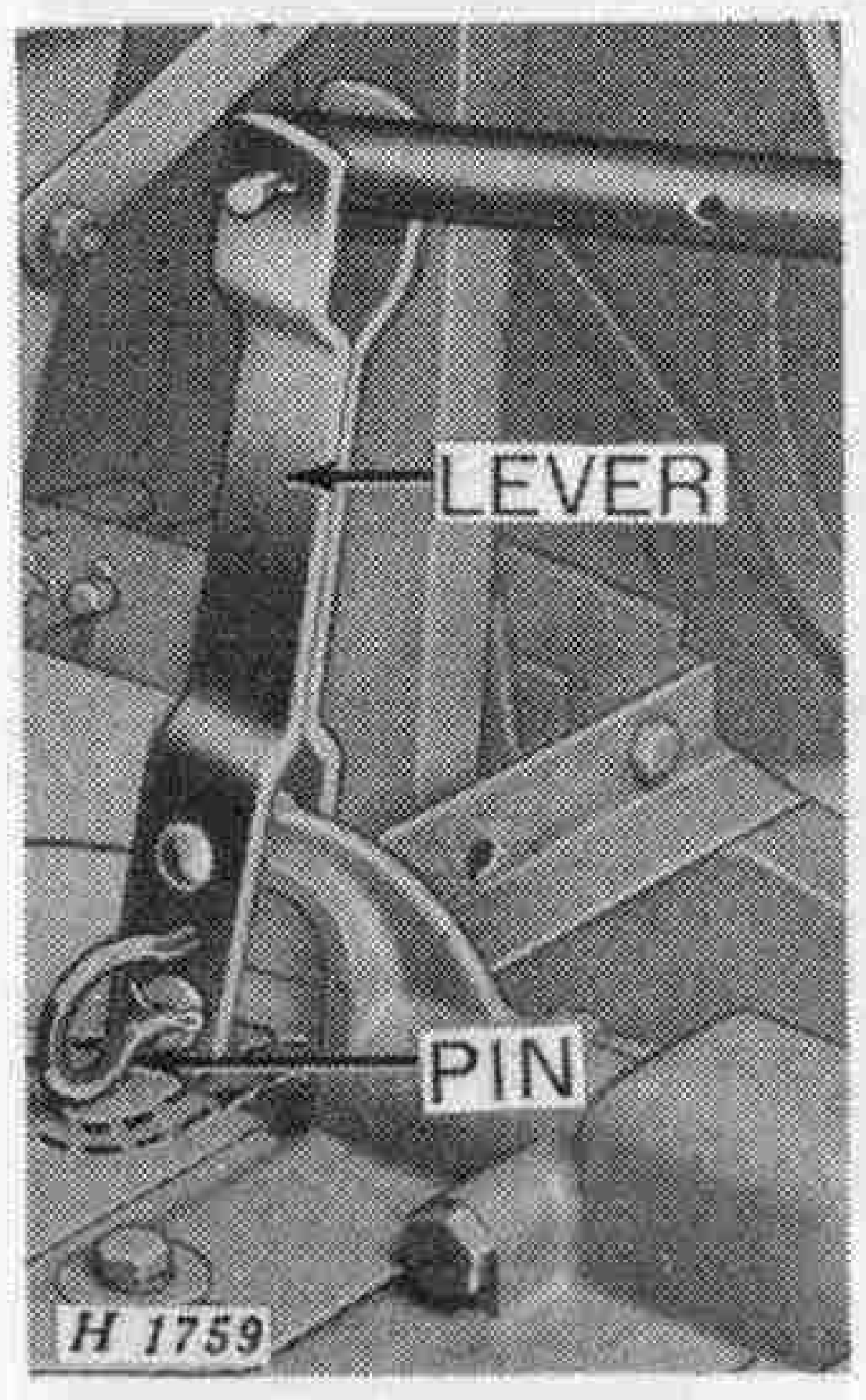
Grain Tank Unloading Auger Gearshift Lever moved forward will disengage the separator and engage the grain tank unloading auger.

Platform Hand Lever moved forward will raise the platform; moved to the rear, it will lower the platform.

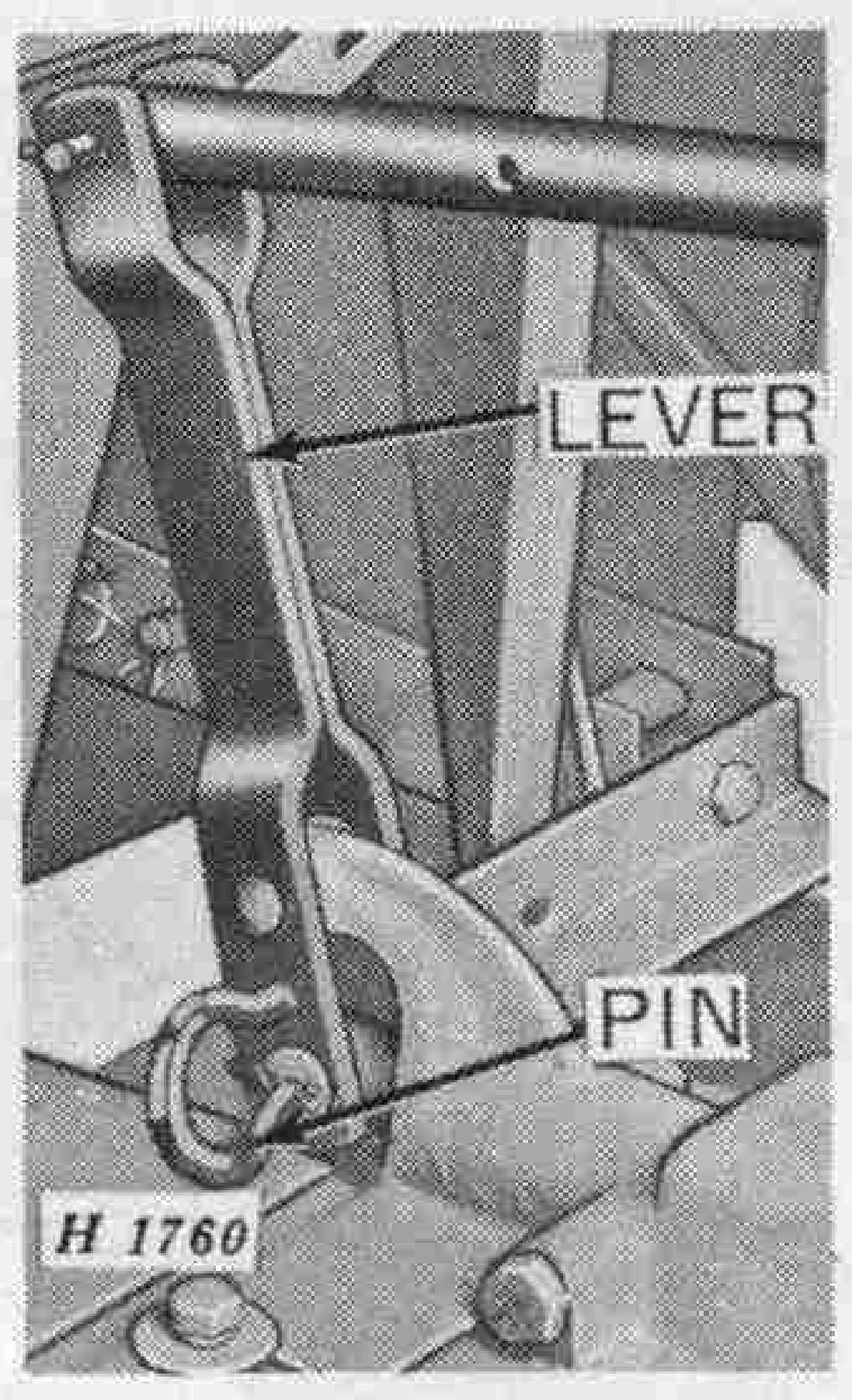

GRAIN TANK UNLOADING AUGER CONTROL ROD
HYDRAULIC REMOTE CYLINDER
H 1758

Grain Tank Combine with Hydraulic Remote Cylinder

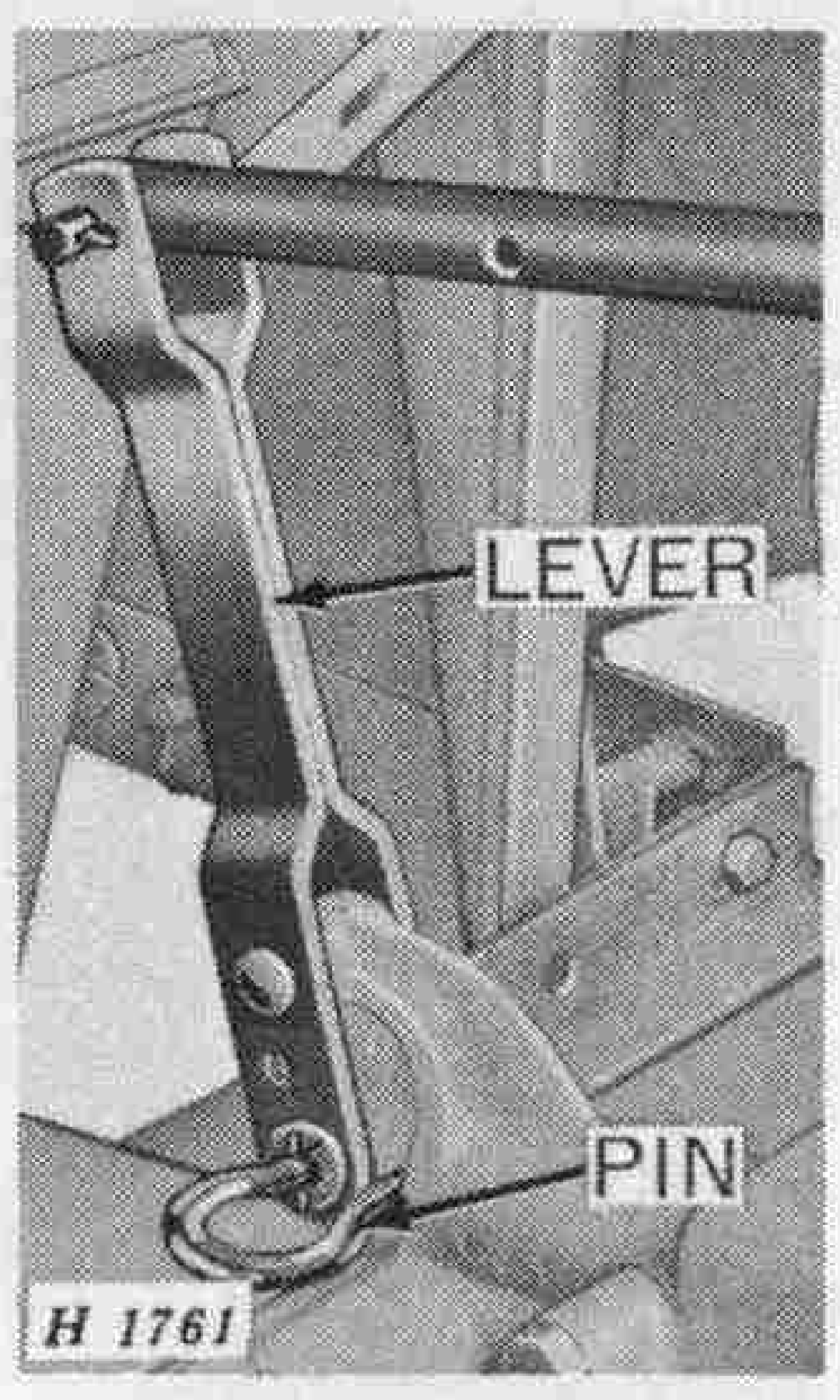
Grain Tank Unloading Auger Control Rod allows grain tank or separator to be engaged or disengaged from tractor seat. Before engaging clutch, stop the forward motion of the combine and disengage the PTO shaft clutch on the tractor.



Separator Engaged. Unloading Auger Disengaged



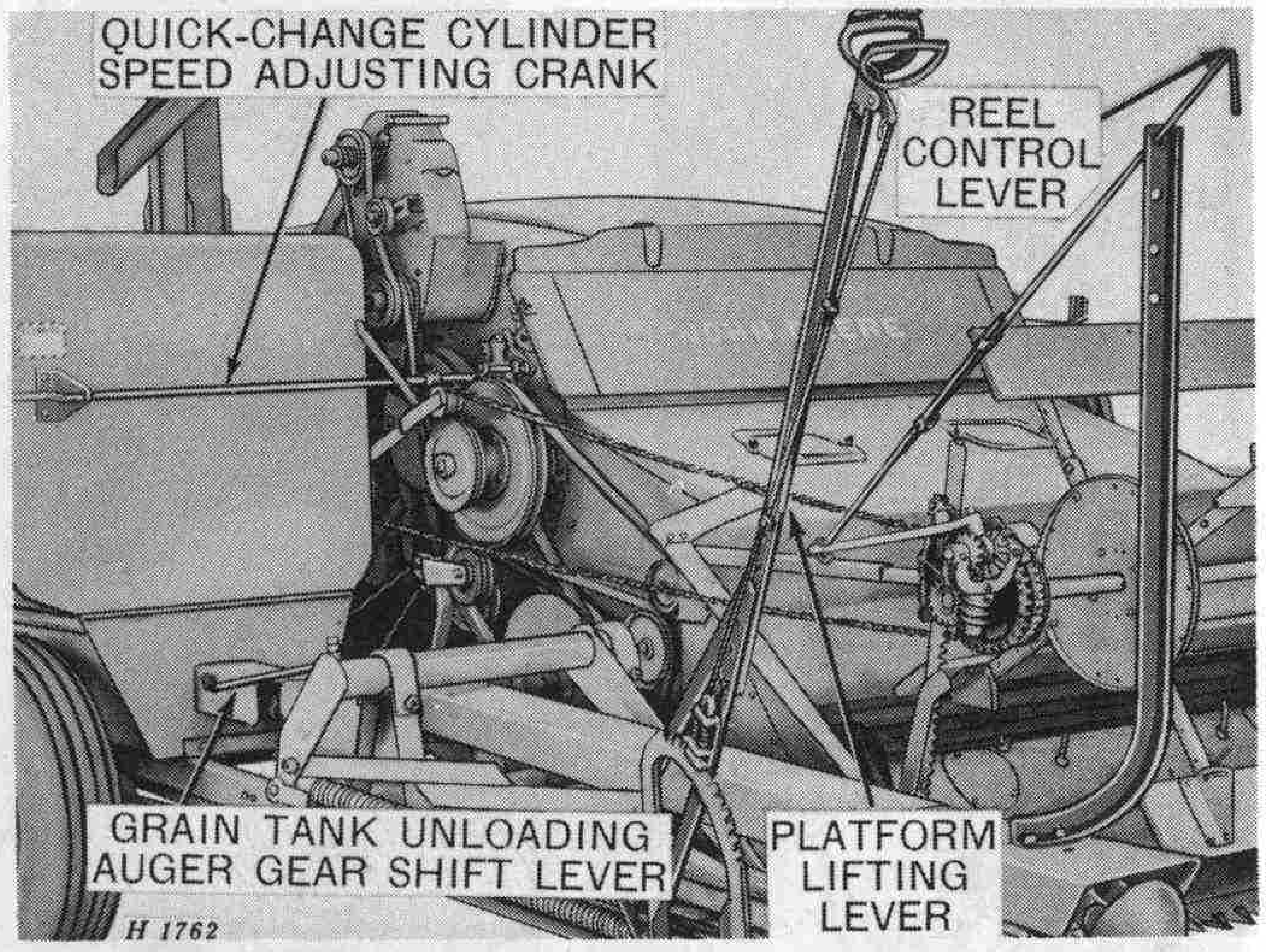
Separator Engaged. Unloading Auger Engaged



Separator Disengaged. Unloading Auger Engaged

Reel Shifter Lever moved forward will lower the reel; moved to the rear, it will raise the reel.

Hydraulic Remote Cylinder is used instead of the platform hand lever to raise or lower the platform. The operation of this cylinder is controlled from the tractor seat.

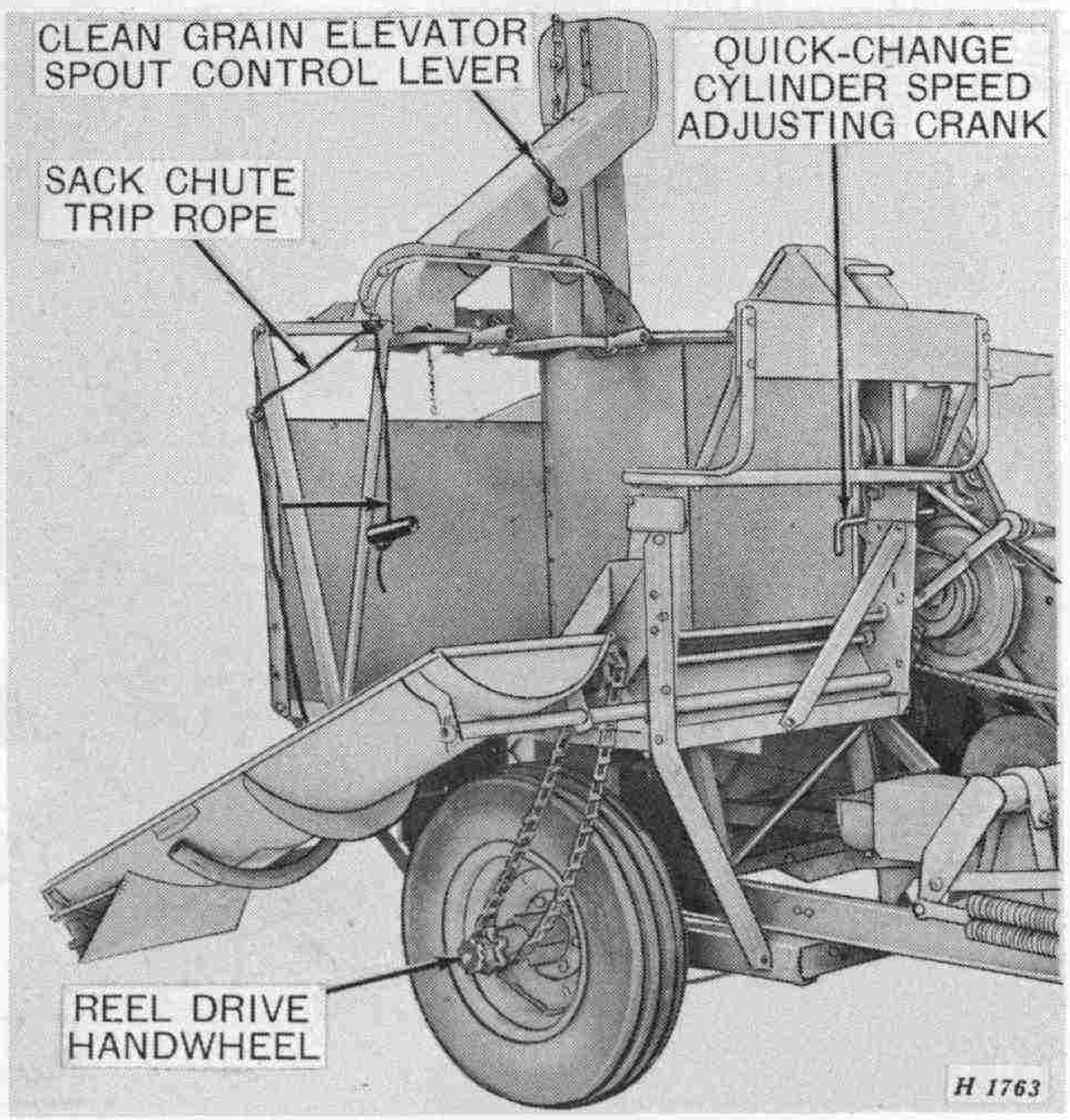

QUICK-CHANGE CYLINDER SPEED ADJUSTING CRANK
REEL CONTROL LEVER
GRAIN TANK UNLOADING AUGER GEAR SHIFT LEVER
PLATFORM LIFTING LEVER
H 1762

Grain Tank Combine with Hand Levers and Standard Type Gear Case

Sack Chute Trip Rope when pulled forward releases the door at the rear of chute, depositing filled sacks on the ground.

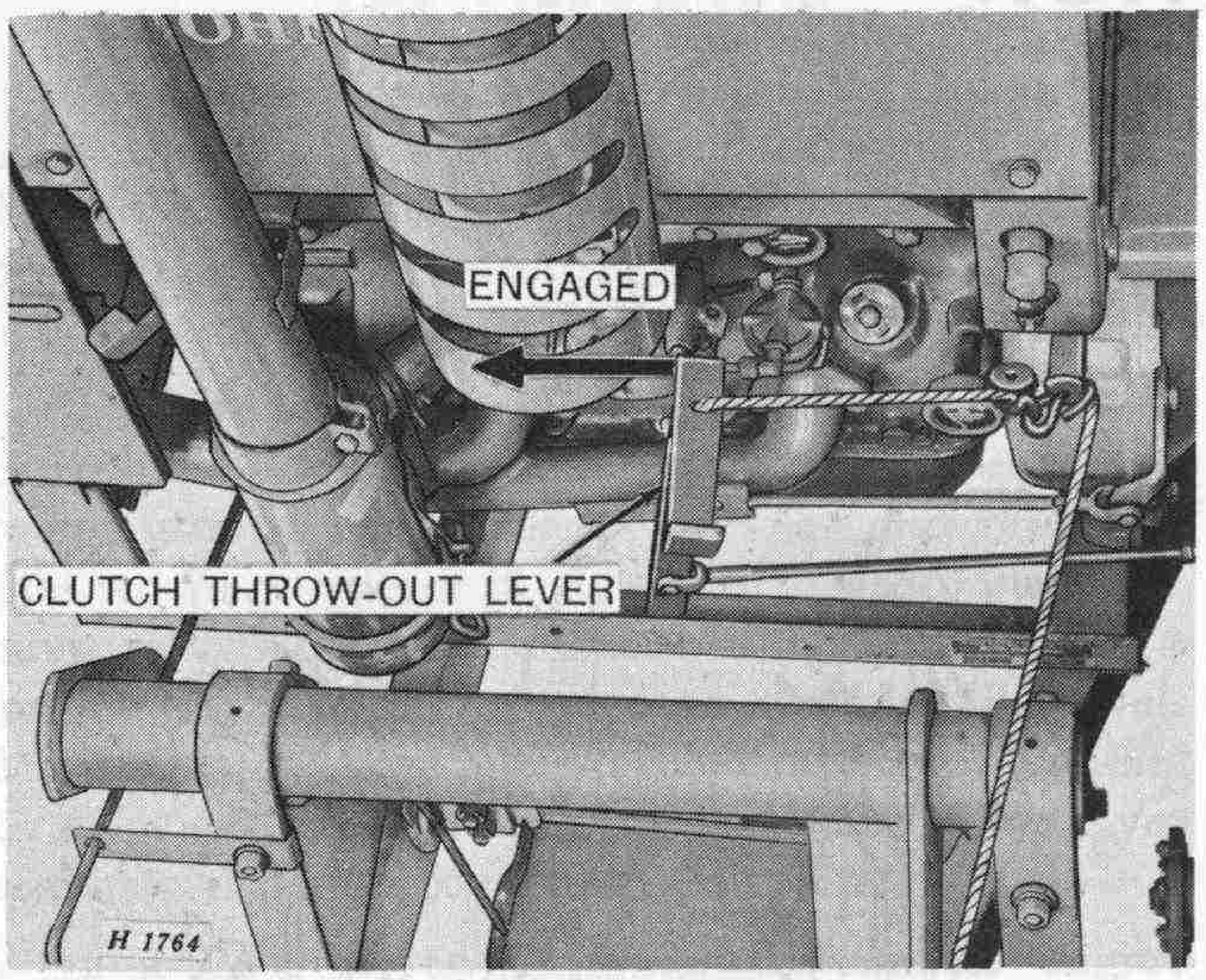
Clean Grain Elevator Sacking Spout Control Lever moved toward the separator diverts the grain down the inner spout; moved toward the sack chute, it diverts the grain down the outer spout.

Reel Drive Hand Wheel when turned clockwise engages reel drive sprocket on right-hand wheel. Turned counter-clockwise it disengages sprocket; this should always be done when transporting combine.


CLEAN GRAIN ELEVATOR SPOUT CONTROL LEVER
QUICK-CHANGE CYLINDER SPEED ADJUSTING CRANK
SACK CHUTE TRIP ROPE
REEL DRIVE HANDWHEEL
H 1763

Sacker Combine with Hydraulic Remote Cylinder

COMBINE EQUIPPED WITH ENGINE CONTROLS



Clutch Control Lever

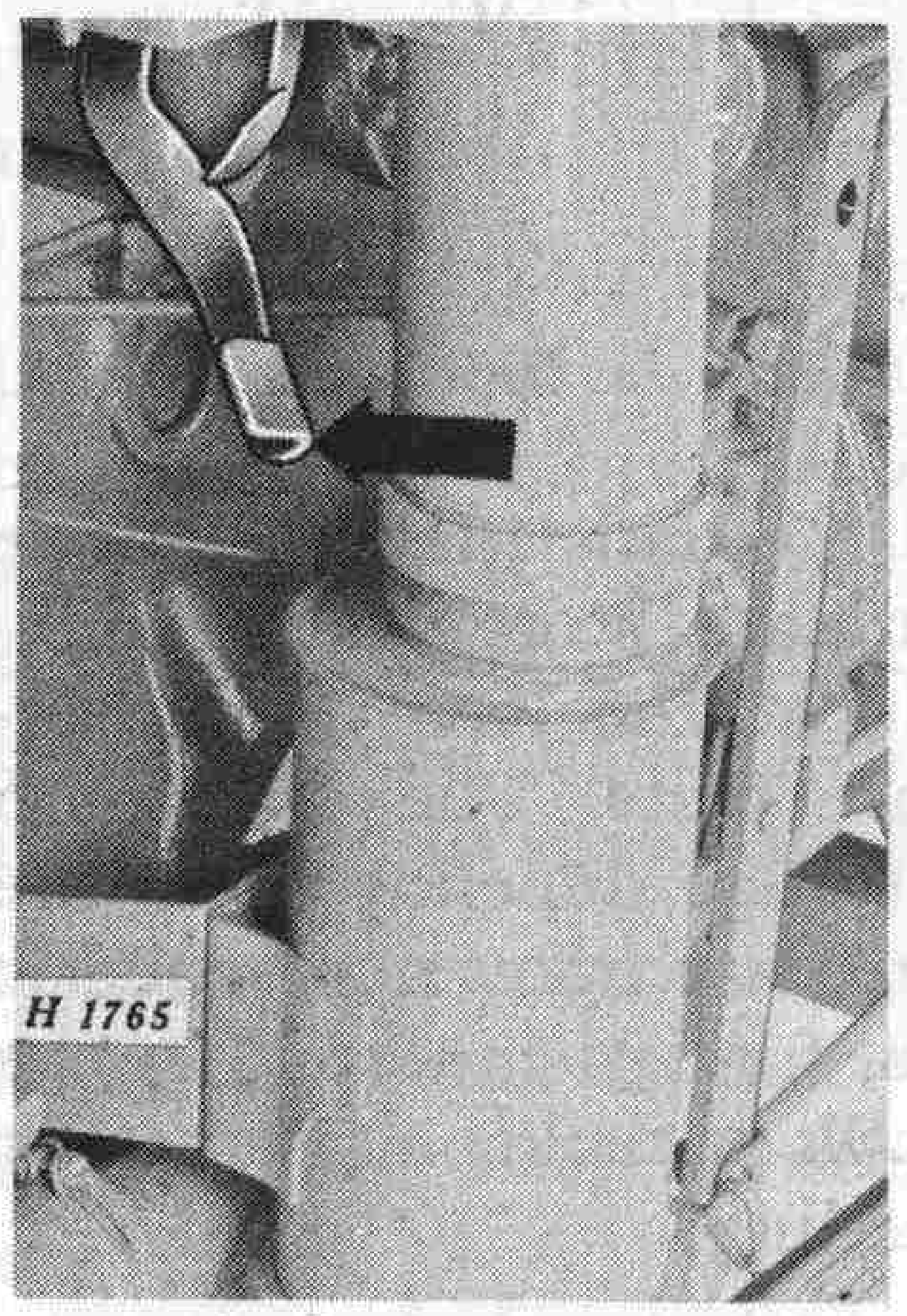
Clutch. The clutch lever is equipped with a rope control so the clutch can be operated from the tractor seat.

To disengage the clutch, pull rope or push lever until the latch catches.

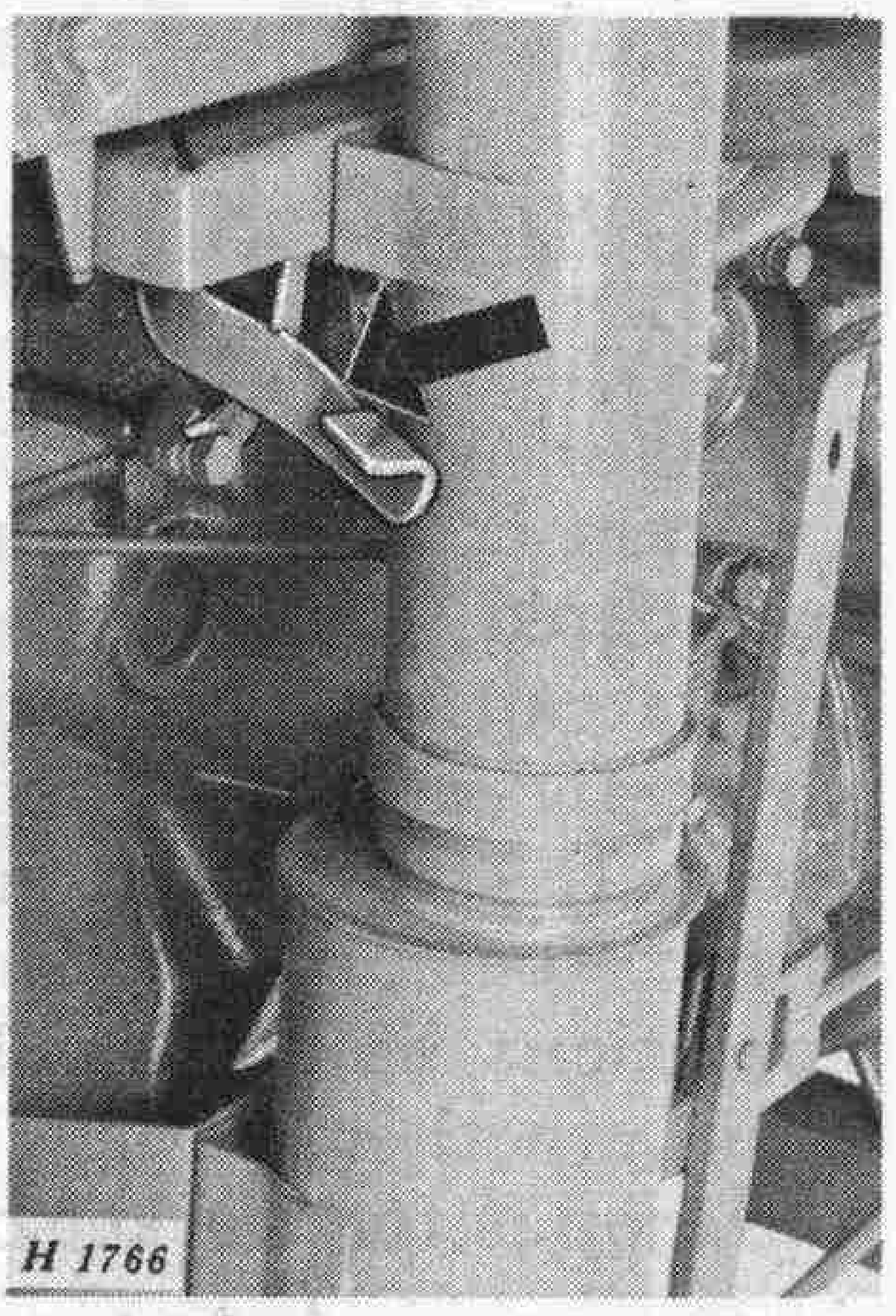
To engage the clutch, pull rope or move lever back until the latch releases, then allow the lever to come forward slowly.

Engine Speed Control Lever. The engine speed is increased by moving the control lever into the lower position and decreased by placing the lever in the upper position.

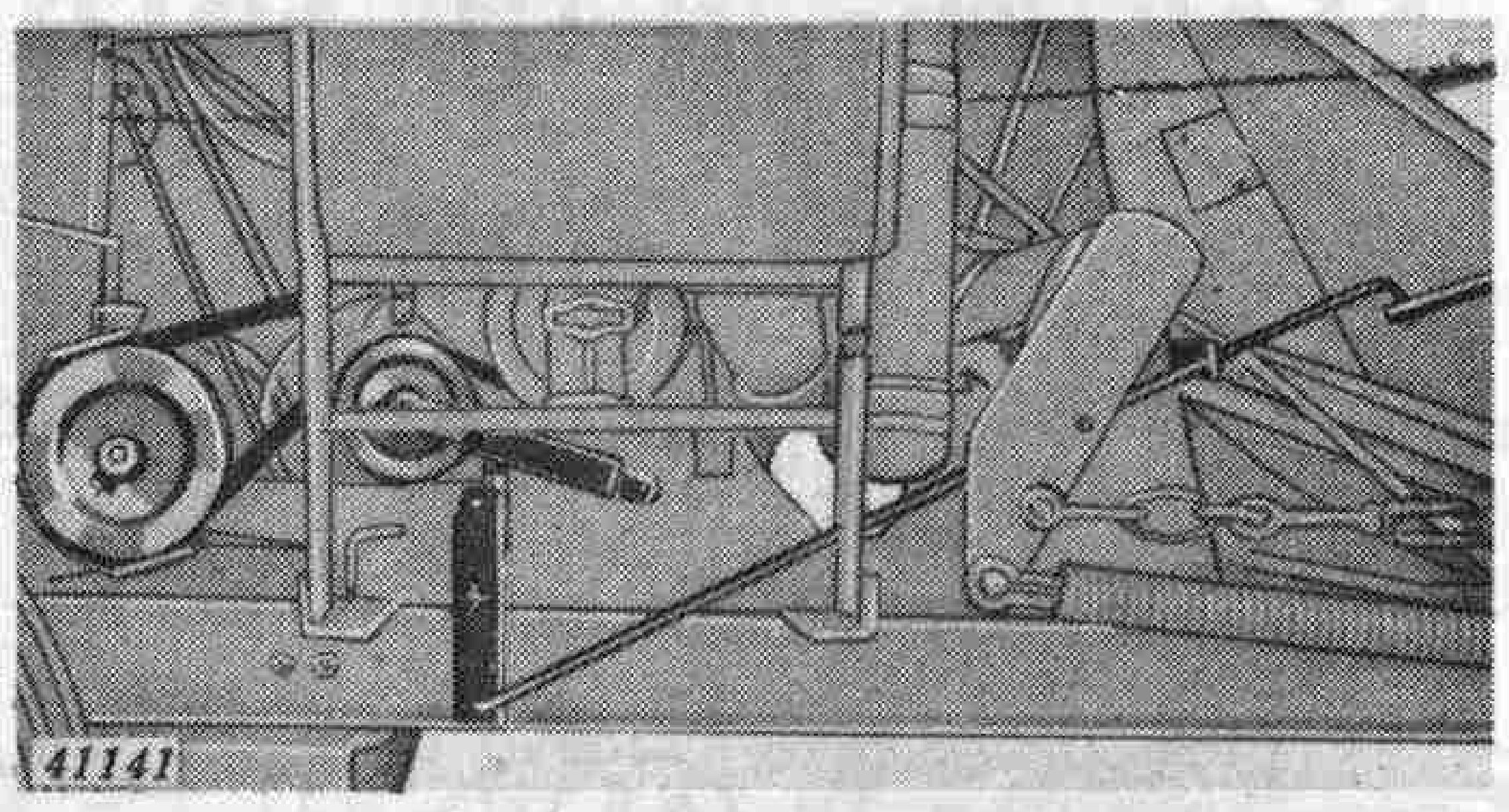
Grain Tank Unloading Auger Control Rod. To engage grain tank unloading auger, pull control rod out; to disengage it, push rod in.



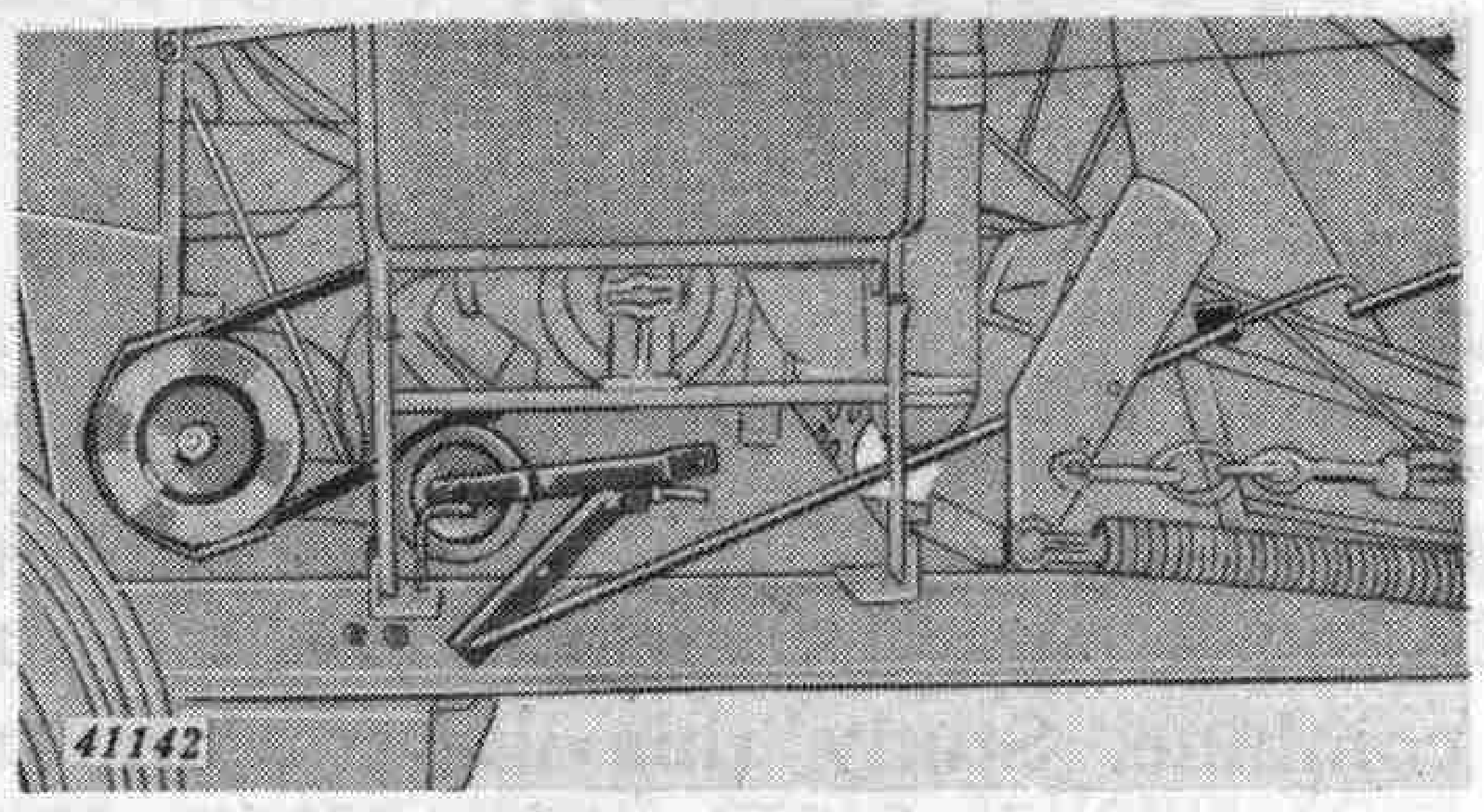
Speed Control Lever in Lower Position



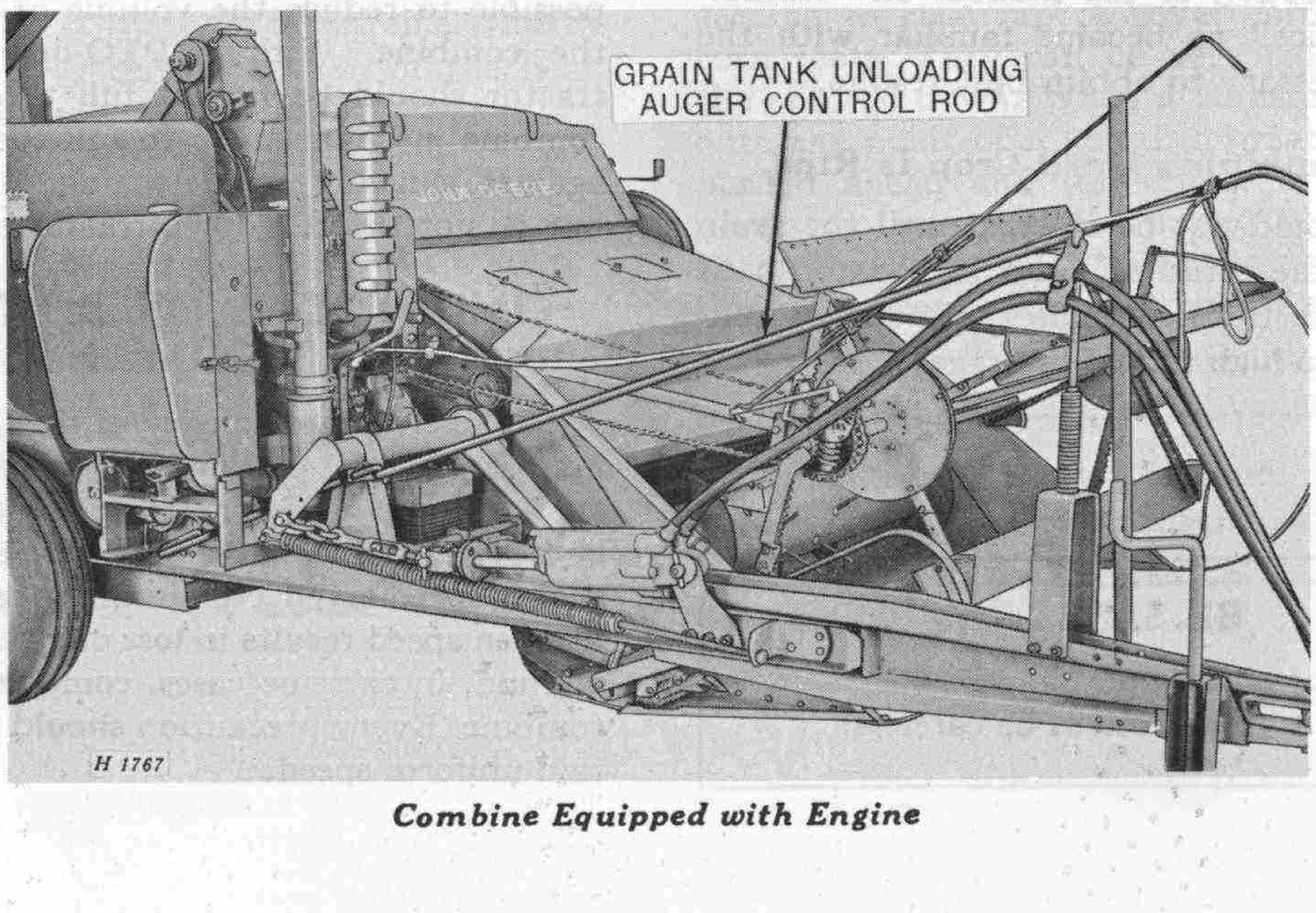
Speed Control Lever in Upper Position



Grain Tank Unloading Auger Engaged



Grain Tank Unloading Auger Disengaged



Combine Equipped with Engine

OPERATION

BREAKING IN THE NEW COMBINE

All V-belt drives should be checked carefully. See the illustrations on page 51. Keep belts tight enough to eliminate slippage, because a belt can be ruined very quickly if it is allowed to slip in the grooves of a sheave for any length of time. Excessive heating of a sheave is a sign of belt slippage. New belts will stretch slightly after the first run-off and tension should be increased. Be sure all shafts turn freely.

Remember, the break-in period is just as important with a new combine as it is with a new automobile. Don't try to "step it down to the floor" right at the start. If you do, trouble is sure to develop later.

STARTING IN THE FIELD

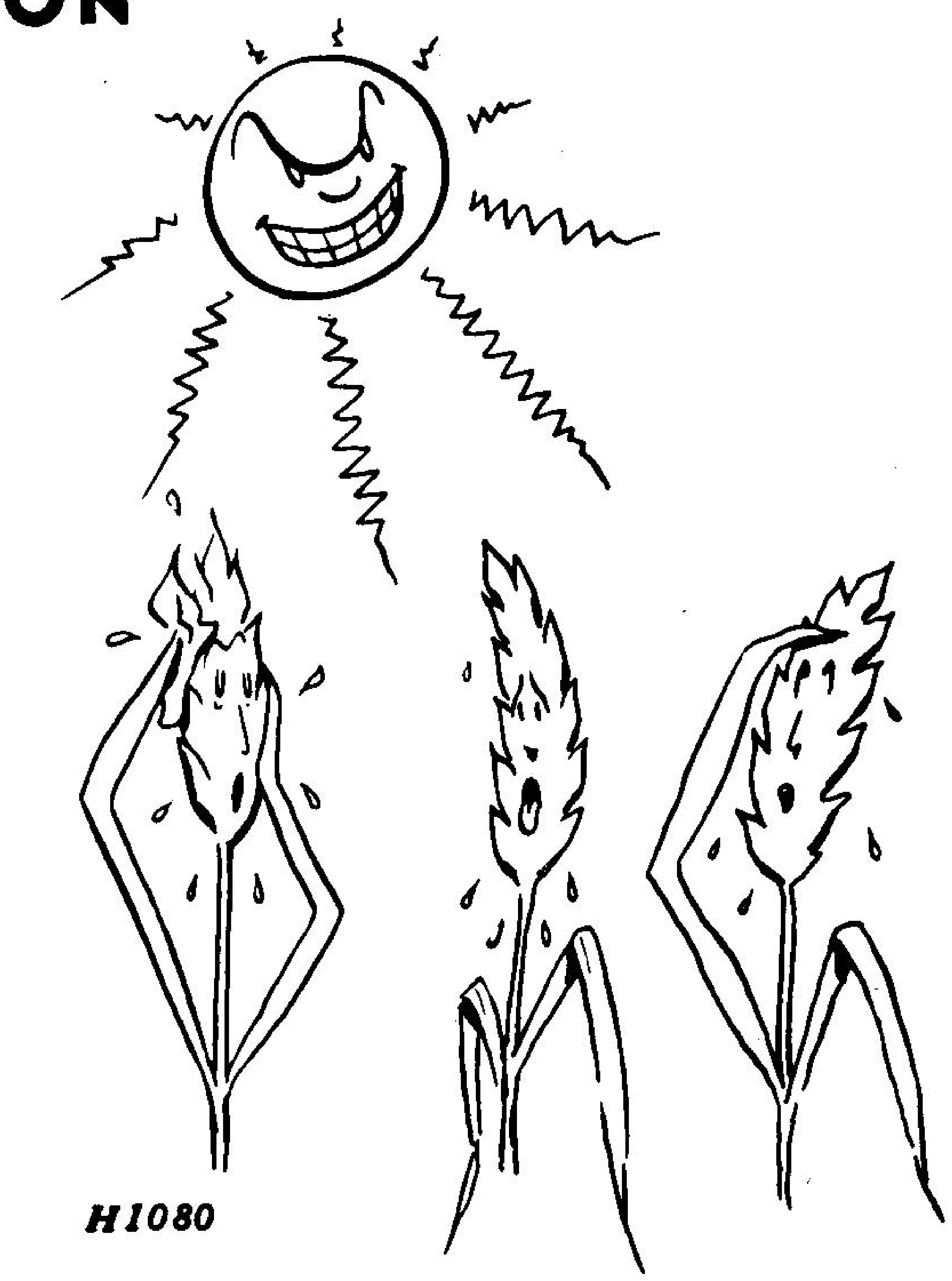
Know Your Combine

Understand Function of All Working Units.

Before starting to combine, turn to page 10 where you will find a cutaway view of the working units of the combine. Study this illustration until you understand the function of each unit thoroughly. Also, read the section of the manual on "Adjustments and Service" to become familiar with the adjustments necessary to obtain best results.

Don't Start Combining Until Crop Is Ripe.

Combining should not be started until the grain is dead ripe. If the threshed grain feels damp or is easily dented with the fingernail, the moisture content is usually too high for safe storage.



Wait Until the Crop Is Dry

Grain crops containing 14% moisture or less are considered dry enough for safe storage. Arrangements can usually be made at the local grain elevator for necessary moisture tests. The maximum moisture content for safe storage depends upon the crop to be combined and in part upon atmospheric conditions, storage facilities, foreign material in the grain, whether handled in bulk or sacks, and whether the crop is for market or feeding.

The first round in the field is usually the hardest. The forward speed of tractor should be as slow as possible to reduce the volume of material entering the combine. With a PTO-driven combine, the tractor should be run at full throttle to keep the combine mechanism up to full speed thus guarding against slugging and clogging. Shift travel speed but do not throttle down tractor engine.

LIMITATIONS OF A PTO-DRIVEN COMBINE

The operating efficiency of any PTO-driven combine is directly proportional to the tractor power available and crop condition. Steady, smooth power is of vital importance—any fluctuations in tractor engine speed is reflected in the speed of the combine. Uneven speed results in loss of grain, inferior threshing and, in extreme cases, complete plugging of the combine. Every precaution should be taken to maintain uniform speed.

BE SAFE

It pays to be careful,
It costs to be careless!

THE OPERATOR

The degree of satisfaction given by this or any other combine is directly dependent upon the carefulness of the tractor operator. Once the combine has been adjusted to meet the crop condition, the rest is up to the operator.

Excessive travel speed is one of the greatest causes of trouble. Traveling at a high rate of speed over rough ground can cause extra wear and breakage that would not occur if the combine was pulled at a more reasonable speed. Overloading, resulting in a loss of grain, is another evil of fast ground travel. More straw is taken in than the combine can handle. Grain is carried over the rack and sieve if the layer of material passing over them is too heavy.

On a PTO-driven combine, the tractor engine must be operated at full throttle at all times. Any reduction in travel speed should be handled by shifting to a lower gear instead of throttling the tractor engine.

When stopping the tractor to unload grain tank, or for any other reason, the combine should be cleaned out before disengaging the power take-off. If necessary to stop in the middle of the field, the combine and tractor should be backed up a few feet before proceeding ahead. This will allow the combine to come up to speed before grain enters.

If there are ditches in the field that require throttling down the tractor engine to cross them, cut around the ditches rather than reduce the engine speed.

Watch the condition of the crop carefully and adjust platform so just enough of the straw is cut to get all the grain. If the crop is extremely heavy and down badly in a certain section of the field, take less than a full swath.

LISTEN FOR SLIPPING CLUTCHES

H1083

Listen for the warning of clutches slipping. Also listen to tractor engine for any evidence of slowing down, caused by the threshing cylinder starting to slug, and stop the tractor before the combine has become completely plugged.

Combine should be thoroughly cleaned out before leaving one field and going to the next in order to reduce the spread of noxious weed seeds. When through cutting in a field, sweep trash and straw off the outside of combine, open doors at bottom of elevators, and run combine until all possible straw trash and grain are removed from inside of combine before moving to the next field.

H 1081

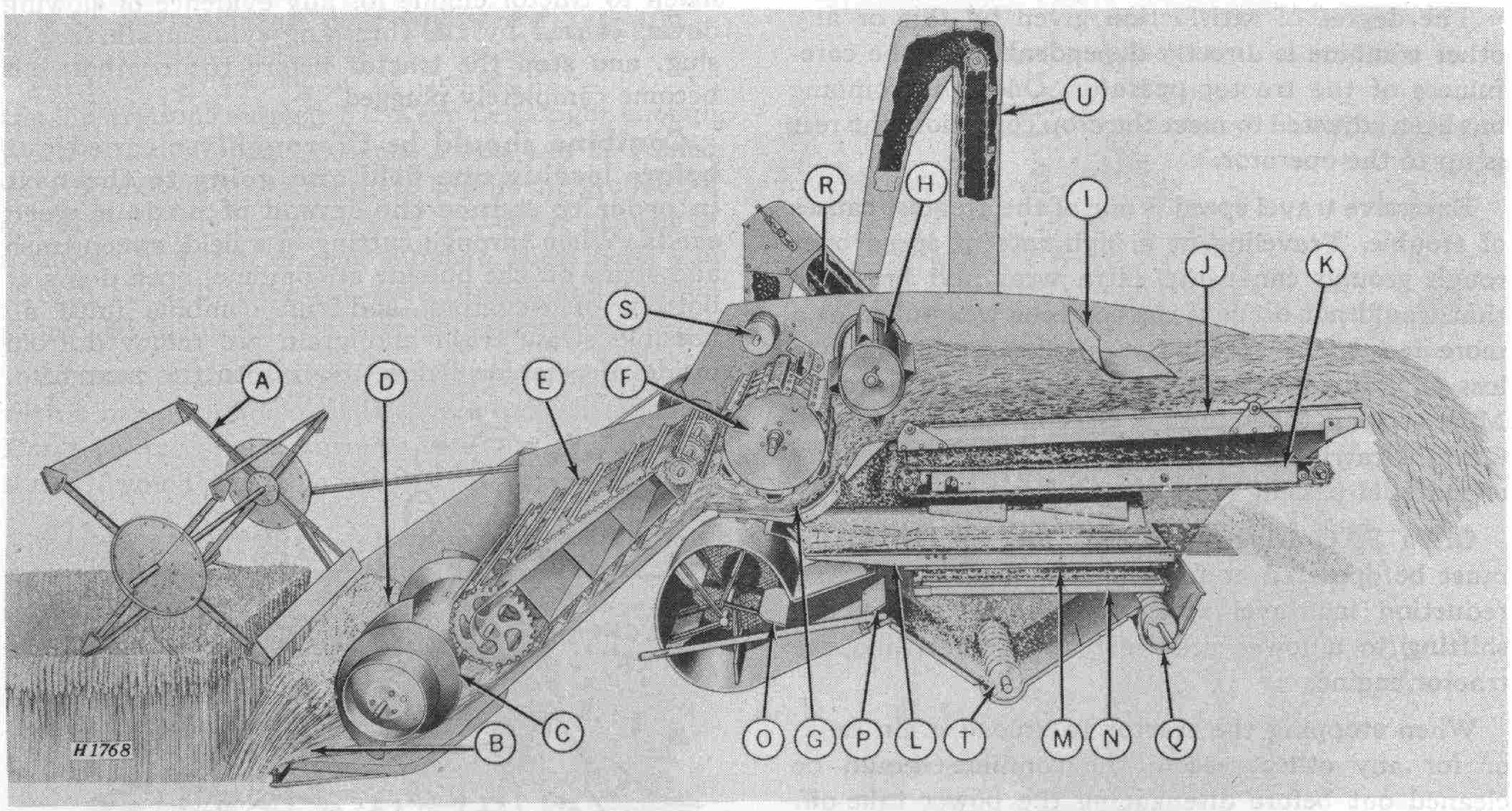
Prepare the Field

PROPER PREPARATION OF FIELD FOR COMBINING WILL MEAN LESS TROUBLE AND MORE PROFITABLE OPERATION

In fields where small grain follows corn in the rotation of crops, special care should be taken before seeding to clean up or cover cornstalks and large corn roots. They can be very troublesome should the crop go down. When a cornstalk or root hooks onto the point of a guard, a great deal of grain is pushed ahead and run down. It is then usually necessary to stop, back up, and clean off the cutter bar before going on. Raising the cutter bar to avoid this will mean a loss of some of the beaten down grain.

Haste can cause an accident. Take your time when working around machines.

CROSS-SECTIONAL VIEW OF JOHN DEERE 30 COMBINE



This cutaway view shows how the grain and straw are handled from the cutter bar straight through the combine.

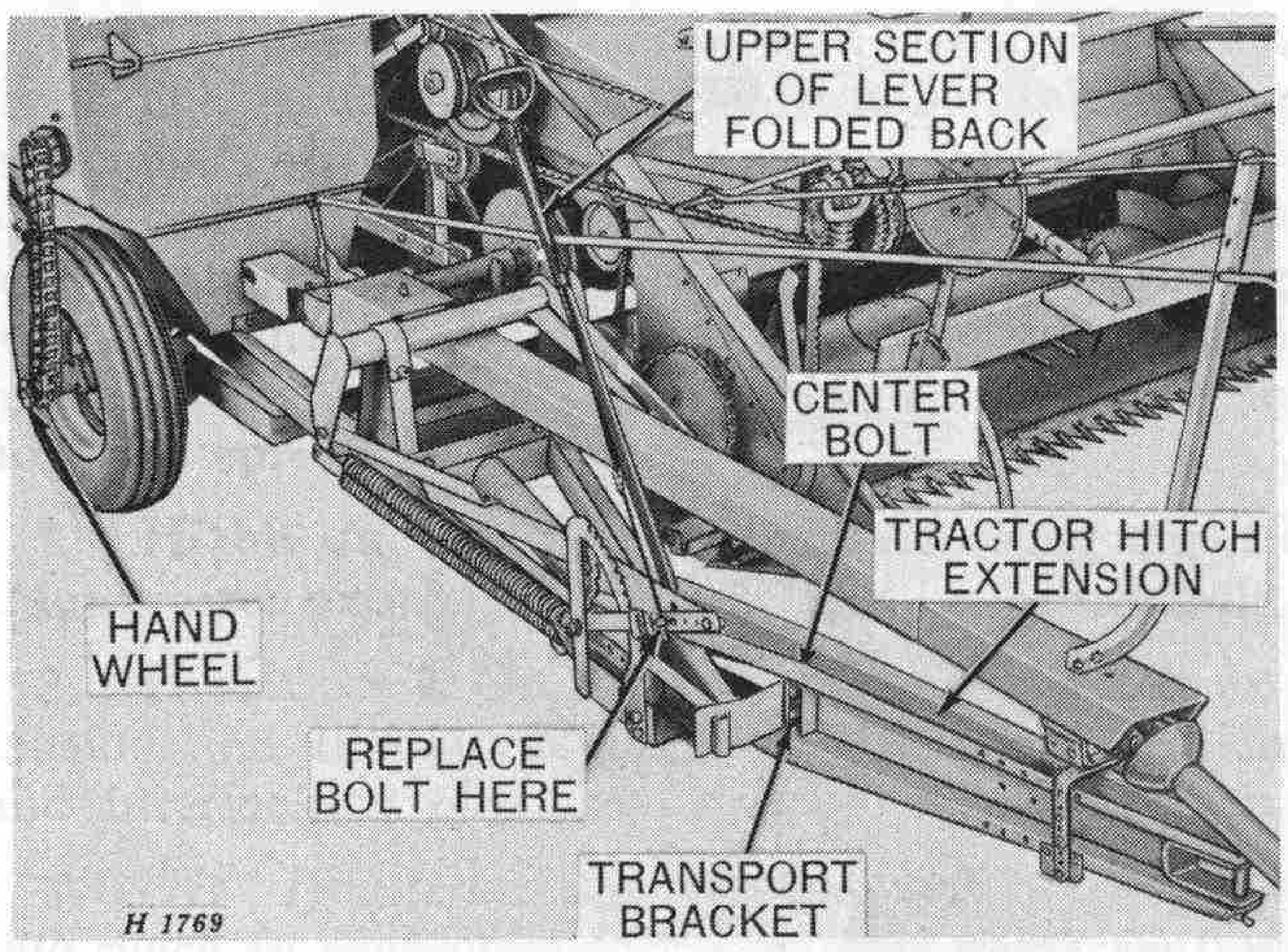
The reel, "A," divides the grain and holds it to the cutter bar, "B," until cut. The auger, "C," carries the grain from both ends of the platform to the center of the auger, where fingers in the auger, at "D," feed the material to the feeder conveyor chain, "E." The feeder conveyor chain, "E," delivers the grain to the rasp-bar cylinder, "F."

As the grain travels between cylinder, "F," and concave grate, "G," and back against beater behind cylinder, "H," the greater part of the separation takes place. The grain falls through the grate to shoe pan, "L," and is moved back to shoe chaffer—grain is not remixed with straw to overload straw rack. Beater, "H," deflects grain down through the chaffer section at the front end of the straw rack, and passes the straw onto straw rack, "J." Curtain, "I," deflects and retards straw and grain so full length of rack is utilized. During its rearward movement, the remaining grain falls through cells in rack onto grain conveyor, "K," and is delivered back to shoe pan, "L," which moves it to front end of chaffer. Straw is then tossed out on the ground.

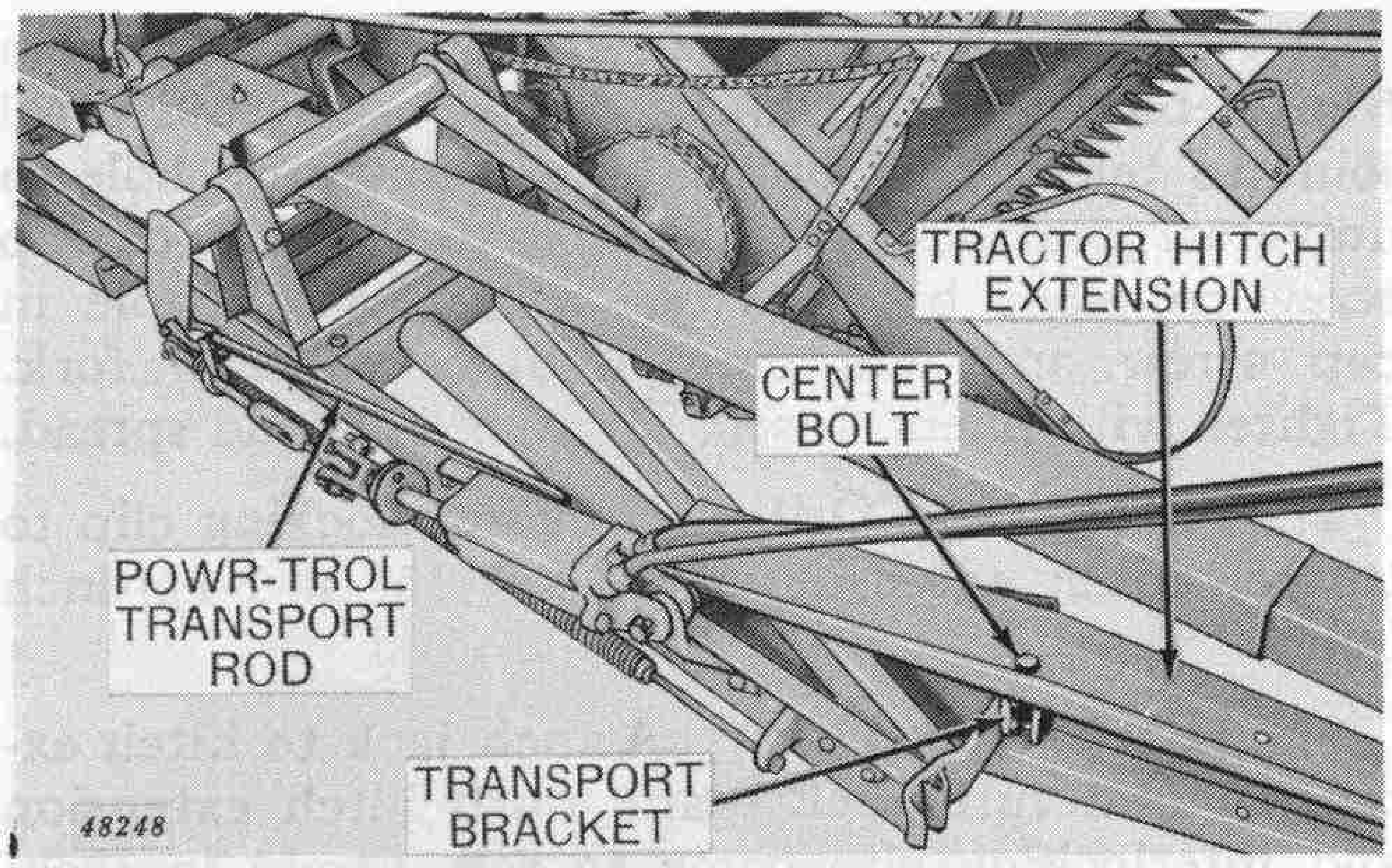
A blast of air from fan, "O," is directed by windboard "P," against shoe chaffer, "M," and shoe sieve, "N." This blast, with the aid of chaffer and sieve agitation, blows chaff away and moves the tailings to tailings auger, "Q." This auger carries them to tailings elevator, "R," which conveys them to distributing auger, "S," where they are delivered to the center of the cylinder for re-threshing.

Clean grain, after dropping through shoe chaffer, "M," and shoe sieve, "N," is carried by clean grain auger, "T," to elevator, "U," on opposite side of combine and elevated into grain tank.

TRANSPORTING



PTO-Driven Combine with Hand Lever in Transport Position



PTO-Driven Combine with Hydraulic Remote Cylinder in Transport Position

Loosen hand wheel on hub of combine right-hand main wheel to disengage reel drive sprocket.

Remove the center bolt in the tractor hitch extension and swing the combine to the right until hitch extension can be bolted to small bracket located on the front of hitch transport bracket.

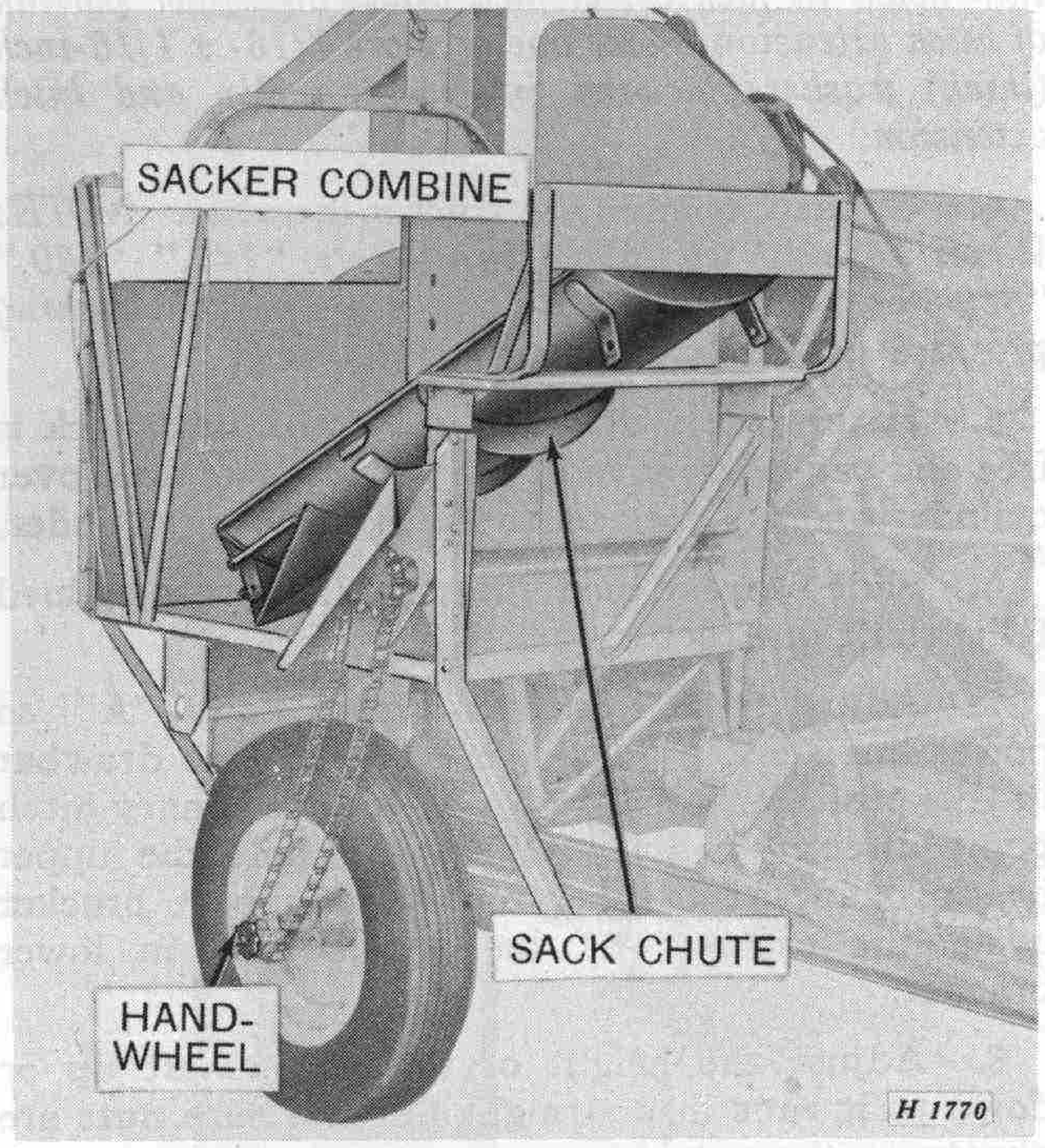
Raise platform to highest position.

If combine is equipped with a hand lever, remove upper bolt through upper and lower sections of lever and fold upper section back. Replace bolt in lower section.

If combine is equipped with hydraulic-remote cylinder, hook transport rod to clevis on lifting crank.

On a sacker combine, remove sack chute, front support pipe, and rear support pipe, and place on operator's platform.

When transporting combine on highway after dusk or during periods of low visibility, use a warning light on the extreme left-hand side of the combine. (See page 14.)



Sacker Combine with Sack Chute in Transport Position

Be Careful

THE LIFE YOU SAVE MAY BE YOUR OWN...

HOOKING UP TO THE TRACTOR WITH 540 RPM PTO

1. Remove wire, cap screw, and flat washer from front end of powershaft. Attach rear universal joint to telescoping powershaft, being sure hole in universal joint lines up with hole in shaft. Lock cap screw in place by inserting wire through hole in cap screw and wrapping around universal fork. Tighten with pliers. Insert cotter in hole and spread.

2. **Hitch Jack Only:** Bolt interlocking clip to tractor hitch extension with a 7/16- x 1-1/4-inch bolt.

3. **Hitch Jack Only:** Attach jack to hitch extension and turn jack crank until hitch extension and interlocking clip come to rest firmly in jack.

NOTE: If interlocking clip does not fit properly into notch in jack or, if jack binds on upper portion of hitch extension, place one or more 7/16- x 1/16-inch (thick) washers between interlocking clip and hitch extension.

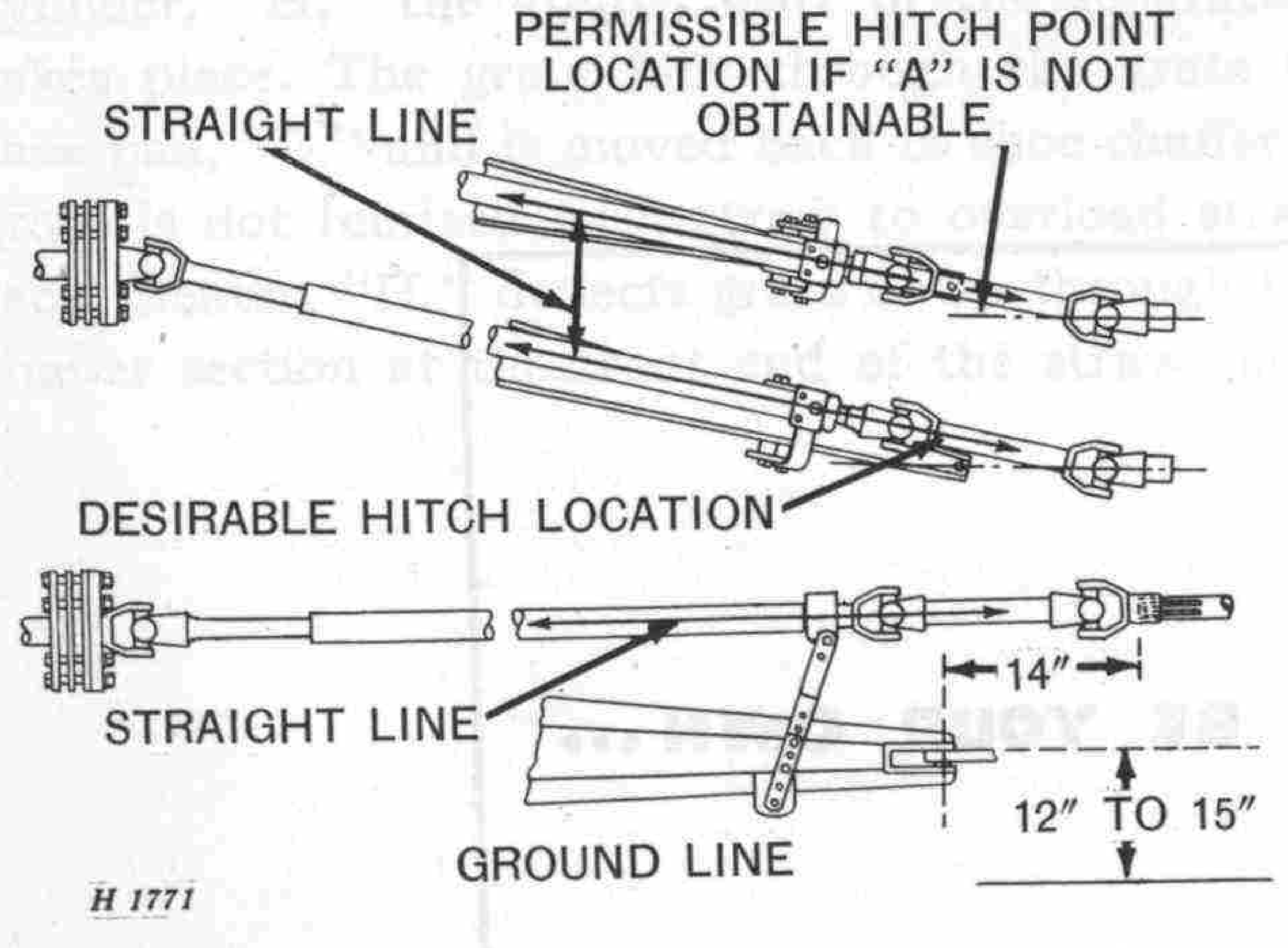
4. Connect combine to tractor drawbar. *NOTE: When hooking up to a John Deere "720," "730," "820" or "830" Tractor, use the 1-1/4-inch bushing provided in rear hole in tractor drawbar.*

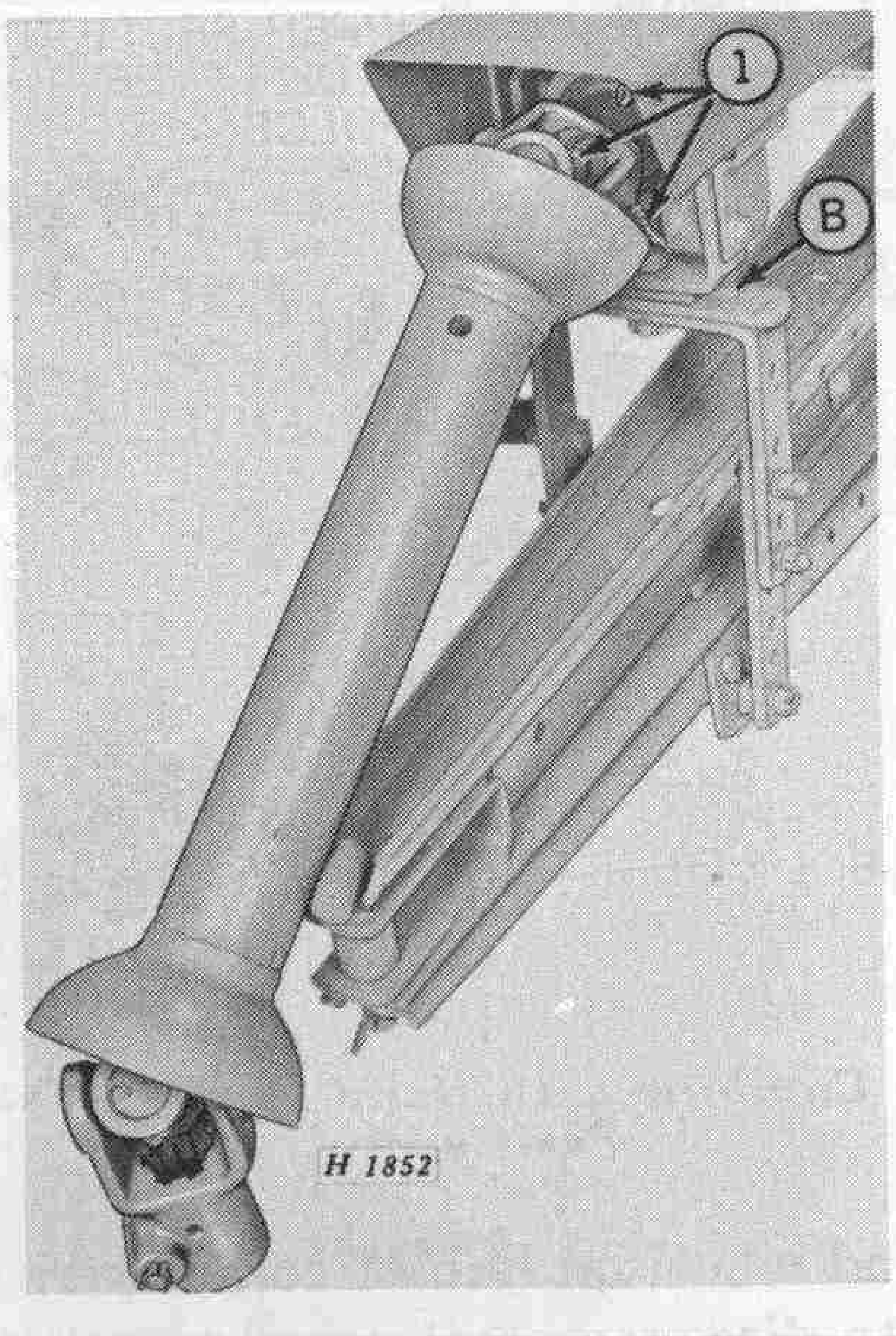
5. **Hitch Jack Only:** Turn crank until jack is free and can be removed from hitch. Open door over cylinder and lay jack on top of cover over cylinder.

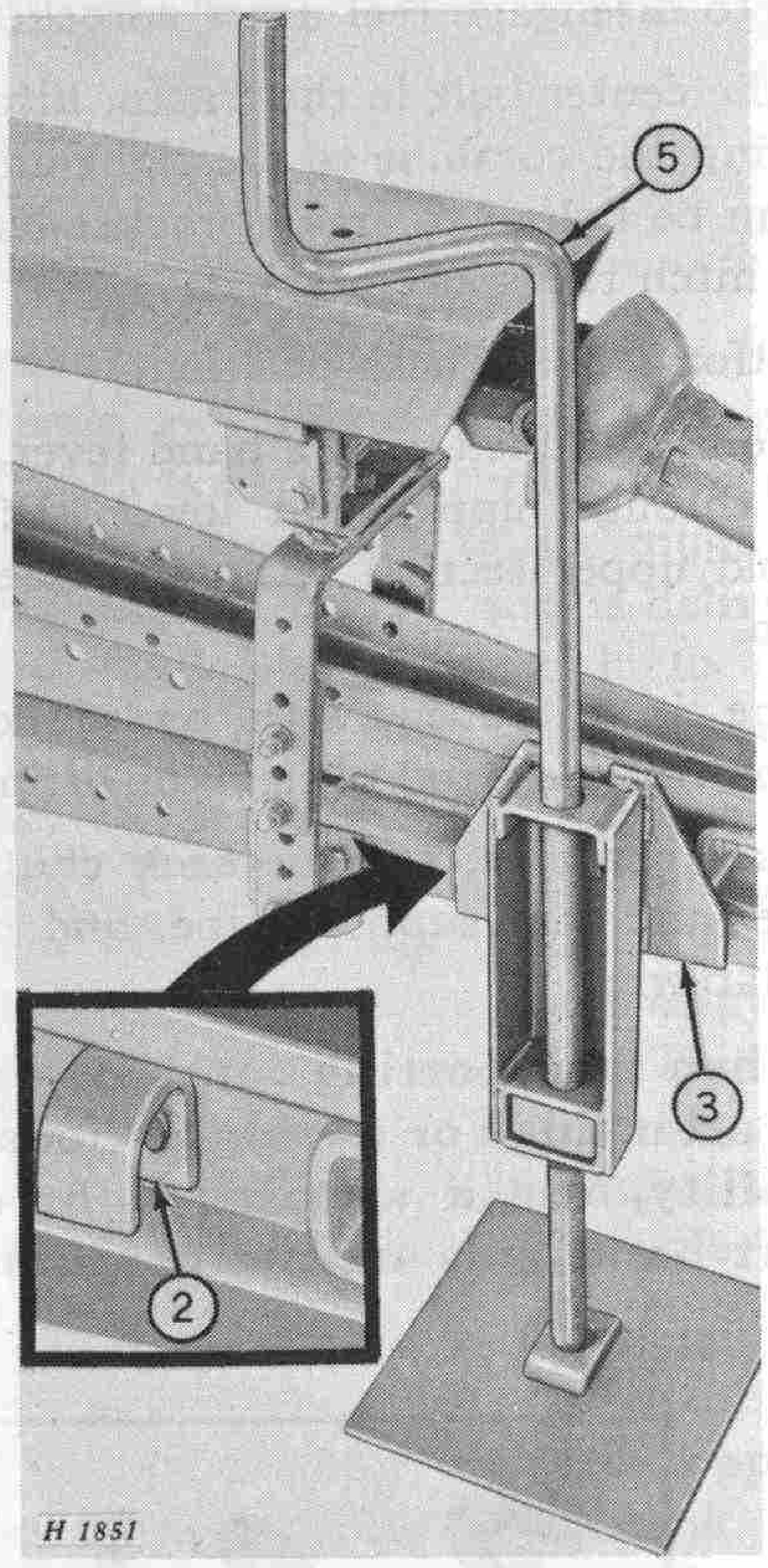
6. Slide front splined universal joint onto splined PTO shaft on tractor.

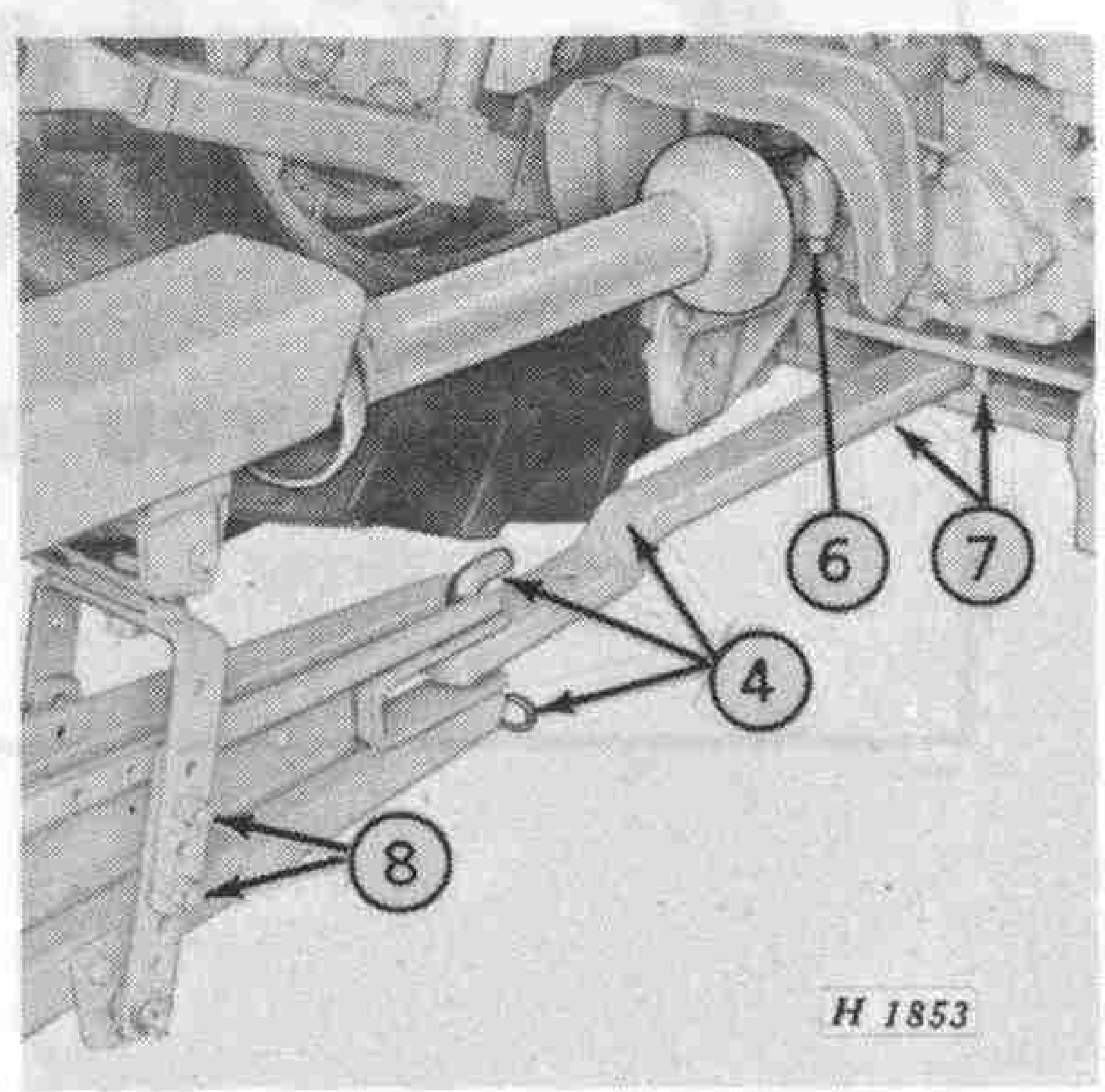
7. Adjust tractor drawbar (hitch point "A") so power line runs in a straight line and lock drawbar in this position. For tractors with a stationary hitch point directly behind PTO shaft, bolt the upper bearing support bracket to lower support bracket using the extreme left-hand hole "B" in lower bracket.

8. Adjust the height of the powershaft up or down so it runs in a straight line. Be sure nuts are always to the outside.









HOOKING UP TO TRACTOR WITH 1000 RPM PTO

1. Remove wire, cap screw, and flat washer from front end of powershaft. Disassemble telescoping powershaft and attach rear universal joint to powershaft, being sure hole in universal joint lines up with hole in shaft. Lock cap screw in place by inserting wire through hole in cap screw and wrapping around universal fork. Tighten with pliers. Insert cotter in hole and spread.

2. **Hitch Jack Only:** Bolt interlocking clip to tractor hitch extension with a 7/16- x 1-1/4-inch bolt.

3. **Hitch Jack Only:** Attach jack to hitch extension and turn jack crank until hitch extension and interlocking clip come to rest firmly in jack.

NOTE: If interlocking clip does not fit properly into notch in jack or if jack binds on upper portion of hitch extension, place one or more 7/16- x 1/16-inch (thick) washers between interlocking clip and hitch extension.

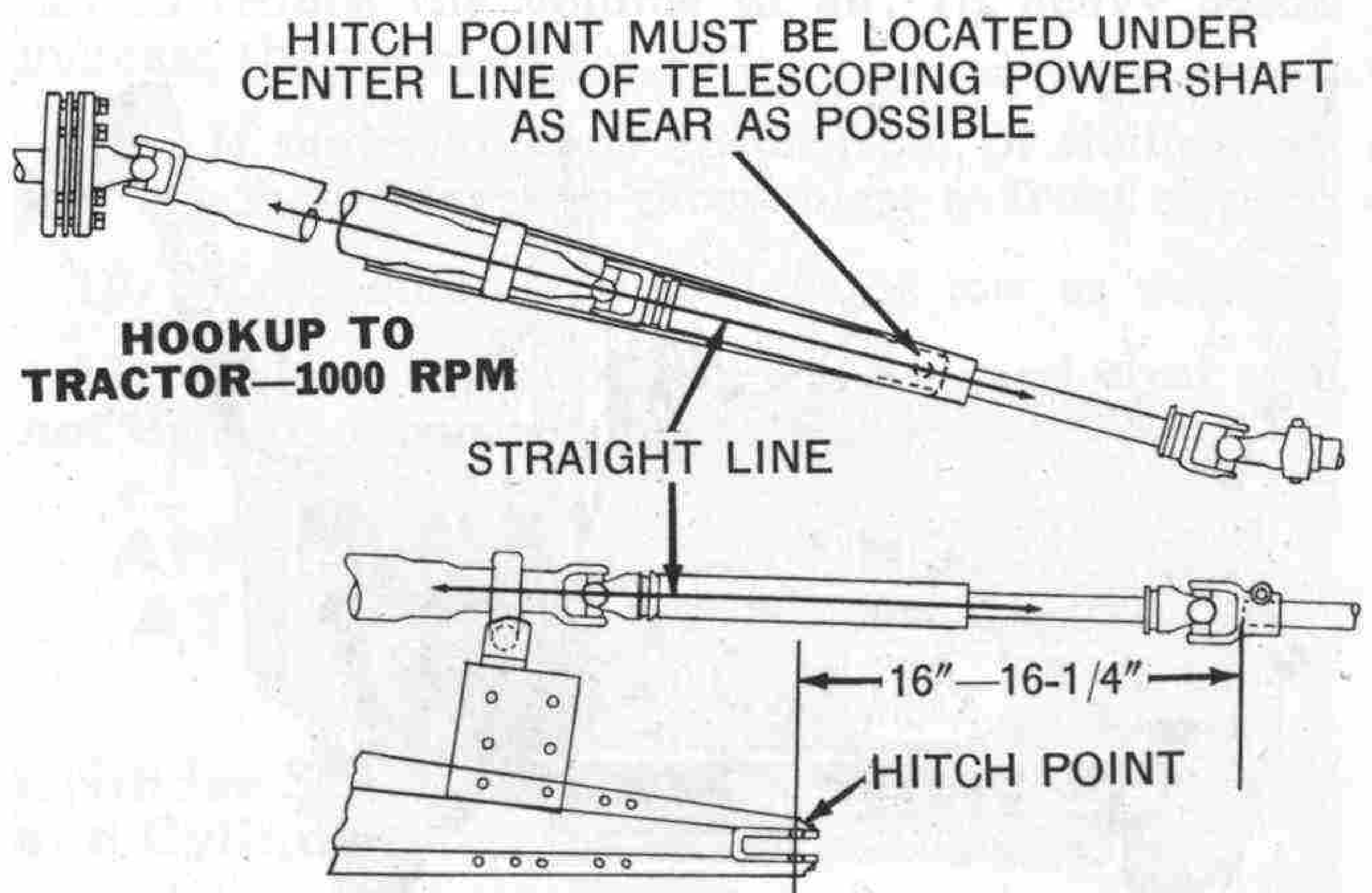
4. Connect combine to tractor drawbar. *NOTE: When hooking up to a John Deere "720," "730," "820," or "830" Tractor, use the 1-1/4-inch bushing provided in rear hole in tractor drawbar.*

5. Apply grease to inside of square tube in rear section. Assemble telescoping powershaft and slide front splined universal joint on splined shaft on tractor.

NOTE: Every 50 hours of operation, remove front section of powershaft and apply grease to inside of square tube in rear section.

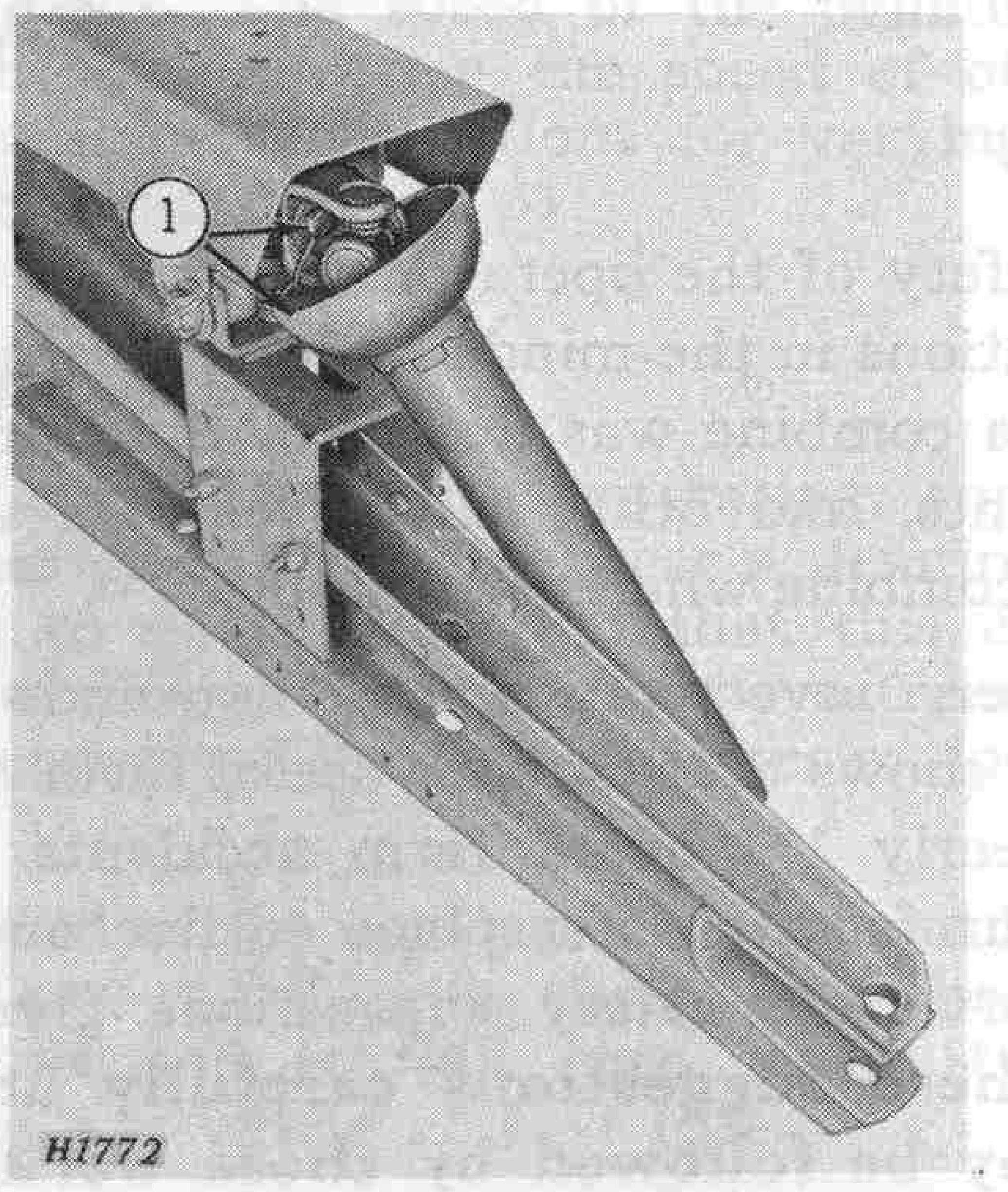
6. Adjust tractor drawbar so powershaft runs in a straight line as seen from the top; lock drawbar in this position.

7. Adjust the height of the powershaft up or down so it runs in a straight line as seen from the side.

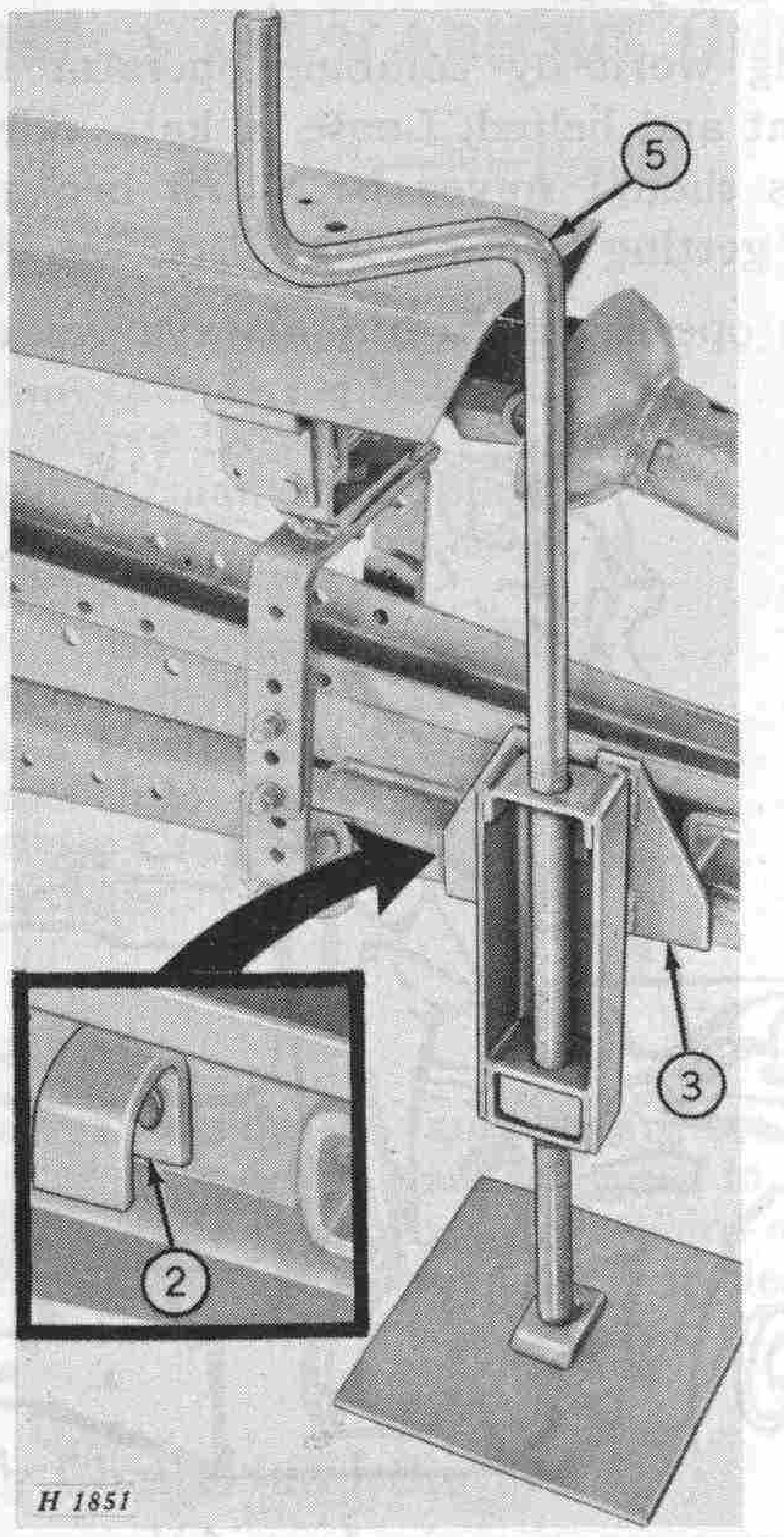

HITCH POINT MUST BE LOCATED UNDER CENTER LINE OF TELESCOPING POWER SHAFT AS NEAR AS POSSIBLE
STRAIGHT LINE
16"—16-1/4"
HITCH POINT

HOOKUP TO TRACTOR—1000 RPM

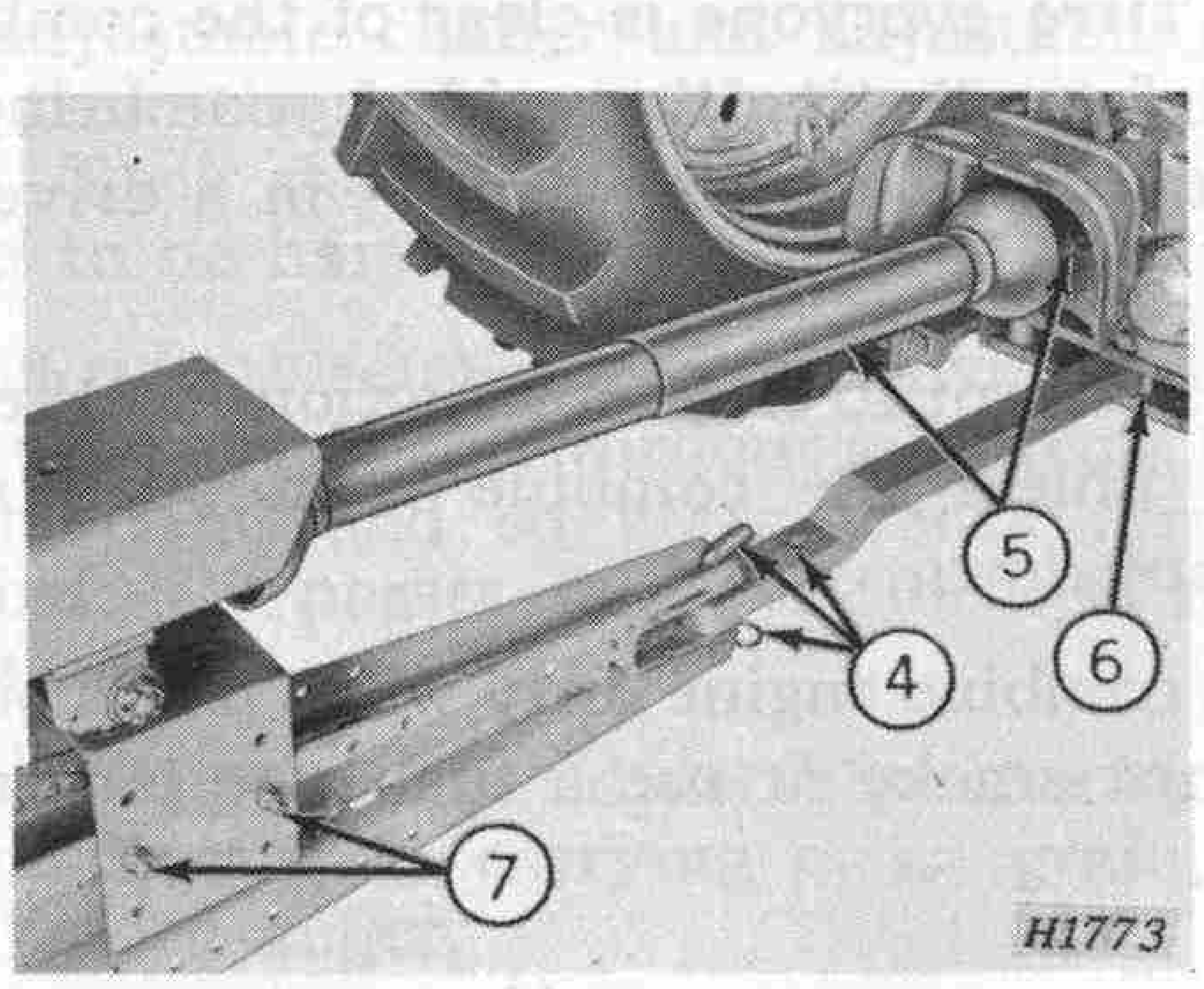
H 1774



H1772



H 1851



H1773

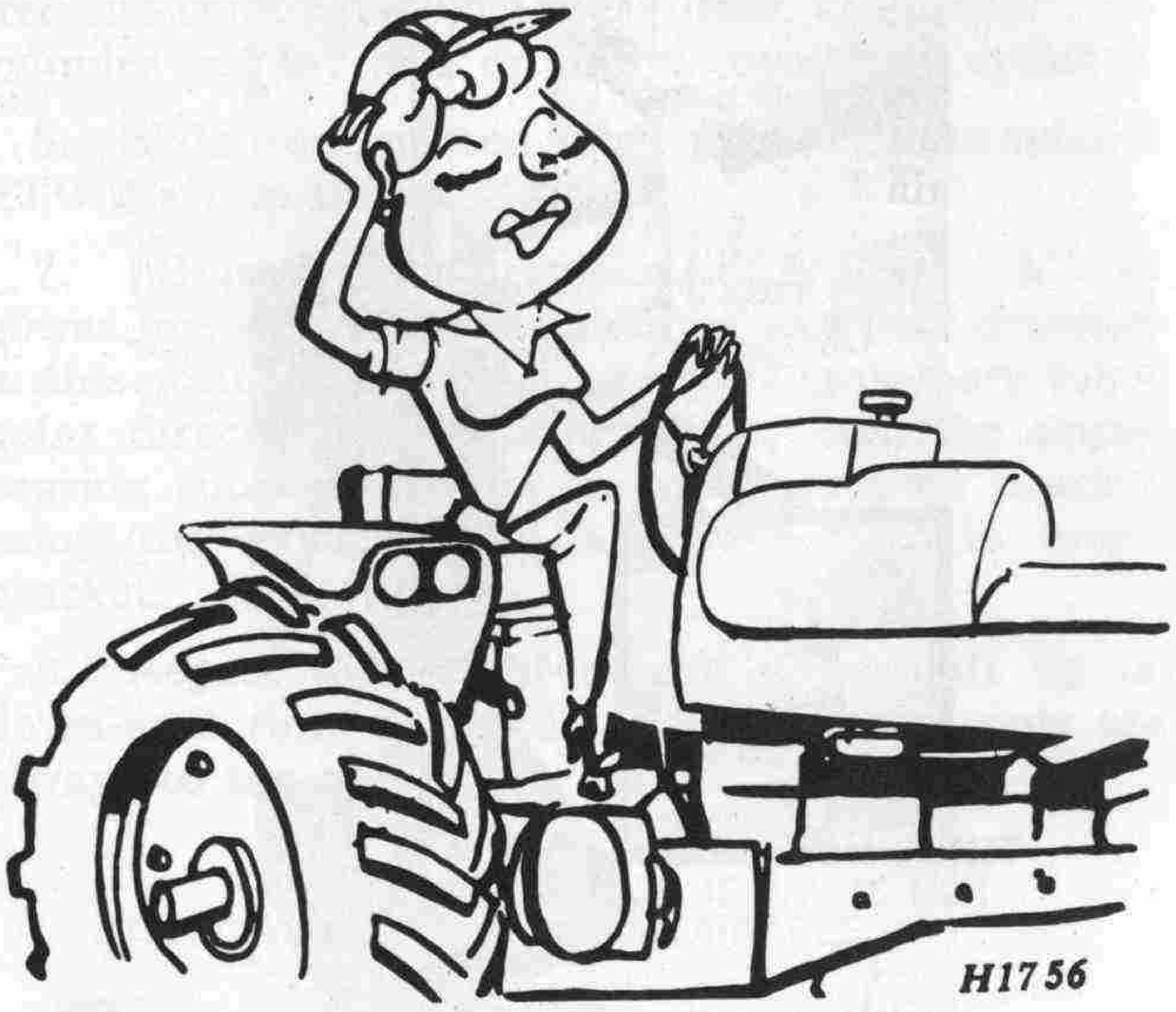
SAFETY SUGGESTIONS

The safety of the operator was one of the prime considerations in the minds of John Deere engineers when this combine was designed. Shielding, simple adjustments, and other safety features were built into the combine wherever possible.

However, investigation of thousands of farm accidents shows that careless use of farm machinery causes nearly 1/3 of all farm accidents. You can make your farm a safer place to live and work if you observe the safety suggestions given below. **Study these suggestions carefully and insist that they be followed by those working with you and for you.**

Clothing worn by combine operator should be fairly tight and belted. Loose jackets, skirts, shirts, or sleeves should **never be worn** because of the danger of getting into moving parts.

Female operators **should always wear** trousers or slacks.



H1756

Make sure everyone is clear of the combine and tractor before starting to avoid anyone being struck by moving parts or being caught in a drive belt or chain.

Never attempt to clear obstructions off the cutting platform unless the combine is stopped and the engine shut down.

Refuel combine engine **only** when it has been shut off. **Do not** smoke or use a fuel type lantern while refueling.

Refill the radiator **only** when the engine has been stopped or is idling slowly. Be sure there is no steam pressure back of the radiator cap to cause scalding when the cap is removed.

Never leave the tractor engine running unattended, even though the clutch is disengaged, while anyone is adjusting, lubricating or repairing the combine.

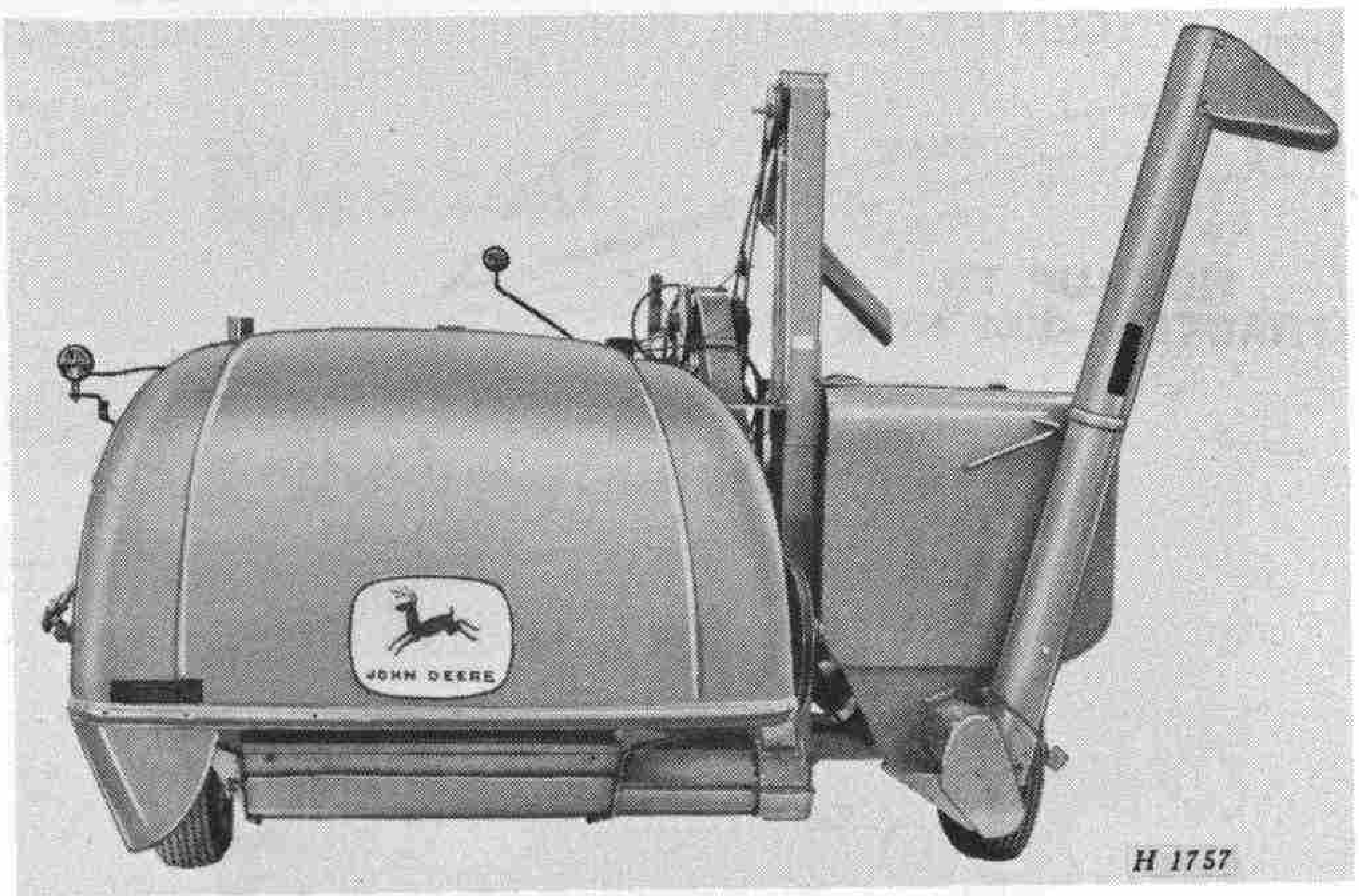
All machinery should be operated **only** by those who are responsible and have been delegated to do so.

Replace badly frayed or worn V-belts **before** they break.

Be sure shields and guards are in place and in good condition before starting in the field.

When hitching the combine to the tractor, back the tractor past the clevis. Then move it **slowly** forward so that, in making the connection, the tractor will be moving away from the combine.

When transporting on a highway, **keep** as far to the right as possible. **Hang** a red flag prominently on the rear of the combine when transporting during daylight hours. **Never** transport on a public road at night or during other period of low visibility, unless the combine and tractor are equipped with lights and they are in good working condition. When transporting **use** a warning lamp at the extreme left-hand side of the combine.



H 1757

FUNDAMENTALS OF COMBINE HARVESTING

On the following pages are charts which give the approximate setting for combining a wide variety of crops. There are any number of other crops that can be handled by this economical, labor-saving, and rapid method of harvesting. All that is required to handle these crops is a thorough understanding of the fundamentals of combine operation.

These fundamentals in brief, are:

1. Be sure crop is in condition to thresh—moisture content not too high, straw not too green, etc.
2. See that beater shaft is operating at the correct speed. Tractor should be in good condition—governor should be properly set and responsive enough to quickly accelerate should an overload occur.
3. Cut the crop as high as possible without excessive loss of low grain heads. If the straw is down and tangled, it may be desirable to use the special pick-up guards. Slow travel speed is required.
4. Adjust the reel for even feeding.
5. **Keep the cylinder speed as low as possible and concave clearance as high as possible** to remove grain from head. Some varieties of edible beans which are easily mutilated may require use of special slow speed cylinder drive. Maintain sufficient beater speed to guard against wrapping of straw on beater.
6. Regulate chaffer openings to pass the grain or seed to the lower screen before it has passed over two-thirds of the length of chaffer.
7. Close lower adjustable sieve as far as possible without carrying clean grain into the tailings auger.
8. Use as much air as possible without blowing over clean seed. If the grain or seed is unusually light, it may be necessary to decrease the speed of the fan to reduce the volume of air. In heavy seeds, increase the speed of the fan.
9. If material loads up on front of chaffer, adjust windboard lever to throw blast to front of shoe.
10. Keep amount of tailings as low as possible.
11. **Select a tractor forward speed that will not overload the combine.**

APPROXIMATE SETTINGS MADE AT FACTORY FOR COMBINING SMALL GRAIN

Cylinder Speed and Spacing Between Concave and Cylinder.

The cylinder and concave spacing is set at 1/4-inch at the factory. Suggested changes for different crops and conditions will be found on pages 16-18.

The cylinder and the separator are driven by separate belts. The speed of the cylinder can be varied without affecting the speed of other parts of the combine. Instructions for varying cylinder speed are found on page 31.

Speed of Separator.

The cutting, threshing, separating, and cleaning units must operate at very near a definite speed at all times to do the fine job that this combine is capable of doing. Extreme high, extreme low, or varying speeds all lead to an inferior job of combining.

The speed of the separator can be checked at the left-hand end of the beater shaft. **This shaft should operate at 740 or 760 rpm when tractor or engine is operating at fast idle.**

SPEEDS OF VARIOUS UNITS

Fast Idle—No Load

Gear Case Drive Shaft	850 rpm
Fan Shaft	675 rpm
Beater Behind Cylinder Shaft (Basic)	750 rpm
Feeder Conveyor Drive Shaft	190 rpm
Grain Conveyor Drive Shaft	270 rpm
Straw Rack Pitman Drive Shaft	270 rpm
Tailings Elevator Drive Shaft	315 rpm
Tailings Distributing Auger	315 rpm
Clean Grain Elevator Drive Shaft	400 rpm
Clean Grain Auger	400 rpm
Grain Tank Horizontal Auger	567 rpm
Grain Tank Unloading Auger	850 rpm
Knife Pitman Crank	436 rpm
Platform Auger	136 rpm

Cleaning Fan.

The valves at sides of fan housing are set about two-thirds open and the blast deflector in fan throat is set to throw the blast about one-third of the way back from the front of shoe for proper cleaning. See pages 16-18 for special settings.

Cleaning Chaffer and Sieve.

The adjustable chaffer and adjustable sieve are shipped from the factory with the lips in the closed position. They should be adjusted as necessary for the crop to be harvested.

A good rule to remember is to have lips of chaffer open as wide as possible without admitting too much coarse material and so grain works through the chaffer before it passes over two-thirds of the length of sieves.

Close the lips of the adjustable sieve as much as possible without its carrying clean grain into the tailings return auger.

SUGGESTED SETTINGS FOR COMBINING VARIOUS CROPS

(These suggested settings are for normal operation. Different field conditions may make it necessary to change these settings.)

CROP	Cylinder R.P.M.	Cylinder and Concave Spacing	Snap on Concave Covers	Cleaning Sieve	Setting of Adjustable Cleaning Sieve	Setting of Chaffer	Shims for Fan Sheaves		Fan Valves	Windboard Lever	Special equipment that may improve operations.
							Gear Case	Fan Shaft			
Alfalfa	1350 to 1500	3/16″–1/4″	Use 3 to 5	Adjustable or 1/10″ round hole	Almost closed	About 1/8 open	6	1	Closed	Rear position	ScourKleen screen—1/20″ round hole.
Barley—Feed and Malting	1000 to 1300	1/4″–1/2″	If necessary	Adjustable	1/3–1/2 open	1/2–2/3 open	4	4	1/2–2/3 open	Center position	No-choke chaffer extension. Slotted auger connection 1/16″ x 1″ ScourKleen screen. Slotted .165″, Triangular .171″, .140″ or .125″.
Beans—Baby Lima	175	1/2″–3/4″	Not required	Adjustable	Slightly over 1/2 open	2/3 to nearly wide open	0	6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″, 1/8″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Beans—Black-Eye	175	3/8″–1/2″	Not required	Adjustable (preferred) or 9/16″ round hole	Slightly over 1/2 open	Nearly wide open	3	6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″ or 1/8″ x 3/4″.
Beans—Great Northern	175 or 250	1/2″–5/8″	Not required	Adjustable (preferred) or 9/16″ round hole	1/2 open	Nearly wide open	3 or 0	6 6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Slotted 5/64″ x 1″, 1/8″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Beans—Kidney	175 or 250	1/2″–5/8″	Not required	Adjustable (preferred) or 9/16″ round hole	1/2 open	Nearly wide open	3 or 0	6 6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″, 1/8″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Beans—Navy	175 or 250	1/2″–5/8″	Not required	Adjustable (preferred) or 9/16″ round hole	1/2 open	Nearly wide open	3 or 0	6 6	Wide open	Center position	Slotted auger connections 5/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″, 1/8″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Beans—Pinto	175 or 250	1/2″–5/8″	Not required	Adjustable	1/2 open	Nearly wide open	3 or 0	6 6	Wide open	Center position	Slotted auger connections 5/32″ x 3/4″ ScourKleen screen. Slotted 5/32″ x 3/4″, 11/64″ x 3/4″ or Round 7/32″.
Beans—Soy	650	5/16″–1/2″	Not required	Adjustable or 9/16″ round hole or 3/8″ round hole	About 1/2 open	About 2/3 open	4 or 3	4 6	Wide open	Center position	Slotted auger connections 1/16″ x 1″ or 3/32″ x 3/4″ ScourKleen screen. Slotted 1/8″ x 3/4″, 3/32″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Beans—White Pea	450 to 550	1/4″–1/2″	Not required	Adjustable	1/2 open	2/3 open	3 or 0	6 6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″, 1/8″ x 3/4″, 5/32″ x 3/4″ or 11/64″ x 3/4″.
Buck Wheat	750 to 900	1/4″–1/2″	If necessary	Adjustable	1/4–1/3 open	About 2/3 open	4	4	About 1/2 open	Center position	ScourKleen screens. Triangular holes .125″, –.140″ or 4.5/64″.
Clover Alsike	1450 to 1550	3/16″–1/4″	3 to 5	Adjustable or 1/12″ round hole	Slightly opened	About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/25″.
Clover—Big English and Dutch	1500	3/16″–1/4″	3 to 5	Adjustable or 1/10″ round hole	Slightly opened	About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/20″.

Clover—Crimson	1450 to 1600	3/16″–1/4″	3 to 5	Adjustable (preferred) or 1/10″ round hole	Slightly opened	About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/20″.
Clover—Fenugreek	1050 to 1400	3/16″–1/4″	3 to 5	Adjustable	Slightly opened	About 3/8 open	6	1	Slightly opened	Rear position	ScourKleen screen. Slotted 5/64″ x 1″.
Clover—Hop	1440 to 1550	3/16″–1/4″	3 to 5	Adjustable or 1/12″ round hole	Slightly opened	About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/20″.
Clover—Red	1500 to 1600	3/16″–1/4″	5	Adjustable or 1/10″ round hole	Slightly opened	About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/20″.
Clover—Sweet	1250 to 1450	3/16″–3/8″	3 to 5	Adjustable or 1/10″ round hole	Slightly opened	About 1/4 open	6	1	Slightly opened	Rear position	ScourKleen screen. Round 1/20″.
Clover—Yellow Blossom	1300 to 1450	3/16″–3/8″	2 to 5	Adjustable or 1/10″ round hole			6	1			ScourKleen screen. Round 1/20″.
Crotalaria	1000 to 1150	1/4″	If necessary	Adjustable or 9/64″ round hole or 13/64″ round hole	About 1/3 open	About 2/3 open	4	4	About 1/2 open	Rear position	No-choke chaffer extension or 1/4″ mesh cover for tailings fingers—ScourKleen screen. Round 4.5/64″ or 1/20″.
Flax	1200 to 1500	3/16″	2 or 3	Adjustable or 5/32″ round hole or 13/64″ round hole	About 1/3 open	1/3–1/2 open	6	1	Slightly opened	Rear position	No-choke chaffer extension or 1/4″ mesh cover for tailings fingers—ScourKleen screen. Round 4.5/64″ or 1/12″ Slotted 3/32″ x 3/4″.
Grass—Blue	1250 to 1500	3/16″–3/8″	If necessary	Adjustable or 9/64″ round hole	1/4–1/3 open	1/2–2/3 open	6	1	Closed	Rear position	ScourKleen screen. Round 1/20″.
Grass—Brome	1400 to 1600	3/16″	3 to 5	Adjustable	1/4–1/3 open	1/2–2/3 open	6	1	Completely closed	Rear position	ScourKleen screen. Round 4.5/64″.
Grass—Canary	1250 to 1350	3/16″	3 to 5	Adjustable	Slightly opened	About 1/2 open	6	1	Completely closed	Rear position	ScourKleen screen. Round 1/20″ or 4.5/64″.
Grass—Carpet	1200 to 1400	3/16″	2 to 4	Adjustable or 1/10″ round hole	1/4–1/3 open	1/2–2/3 open	6	1	Almost closed	Rear position	ScourKleen screen. Round 1/20″ or 4.5/64″.
Grass—Crested Wheat	1000 to 1150	3/16″	2 to 4	Adjustable	1/4–1/3 open	1/2–2/3 open	6	1	Almost closed	Rear position	No-choke chaffer extension or 1/4″ mesh screen cover for tailings fingers—ScourKleen screen. Round 4.5/64″ or 1/20″.
Grass—Fescue	1100 to 1300	3/16″–1/4″	2 to 4	Adjustable or 1/10″ round hole	1/4–1/3 open	1/2–2/3 open	6	1	Almost closed	Rear position	ScourKleen screen. Round 4.5/64″ or 1/20″.
Grass—Johnson	1100 to 1300	3/16″–1/4″	2 to 4	Adjustable	1/4–1/3 open	1/2–2/3 open	6	1	Almost closed	Rear position	ScourKleen screen. Round 4.5/64″ or 1/20″.
Grass—Millet	1100 to 1300	3/16″–1/4″	2 to 5	Adjustable or 9/64″ round hole	Slightly opened	About 1/2 open	6	1	Almost closed	Rear position	ScourKleen screen. Round 1/20″.
Grass—Orchard	1100 to 1300	3/16″–1/4″	2 to 5	Adjustable or 1/12″ round hole	Slightly opened	About 1/2 open	6	1	Almost closed	Rear position	ScourKleen screen. Round 1/20″ or 4.5/64″.
Grass—Red-Top	1150 to 1500	3/16″–1/4″	3 to 5	1/32″ x 1/2″ Slotted		About 1/4 open	6	1	Closed	Rear position	ScourKleen screen. Triangular .165″ reverse process.
Grass—Rhodes	1100 to 1300	3/16″–1/4″	3 to 5	Adjustable or 9/64″ round hole	About 1/4 open	About 1/2 open	6	1	Almost closed	Rear position	ScourKleen screen. Triangular .165″ reverse process.

SUGGESTED SETTINGS FOR COMBINING VARIOUS CROPS—Continued

(These suggested settings are for normal operation. Different field conditions may make it necessary to change these settings.)

CROP	Cylinder R.P.M.	Cylinder and Concave Spacing	Snap on Concave Covers	Cleaning Sieve	Setting of Adjustable Cleaning Sieve	Setting of Chaffer	Shims for Fan Sheaves		Fan Valves	Windboard Lever	Special equipment that may improve operations.
							Gear Case	Fan Shaft			
Grass—Rye	1100 to 1400	3/16″–1/4″	3 to 5	Adjustable	About 1/4 open	About 1/2 open	6	1	Closed	Rear position	ScourKleen screen. Round 4.5/64″ or 1/20″.
Lespedeza	600 to 700	3/16″–1/4″	If necessary	Adjustable or 9/64″ round hole	1/3 open	1/2–2/3 open	6 or 4	1 4	Almost closed or closed	Rear position	Six- or eight-slat reel needed. ScourKleen screen. Round 4.5/64″ or 1/20″.
Lupine	700	3/8″–3/4″	Not required	Adjustable	About 1/2 open	About 2/3 open	3	6	Wide open	Center position	ScourKleen screen. Slotted 3/32″ x 3/4″—1/8″ x 3/4″.
Mustard	700	3/8″–1/2″	2 to 4	Adjustable	1/4–1/3 open	About 2/3 open	6	1	Almost closed	Front position	No-choke chaffer extension or 1/4″ mesh screen cover for tailings fingers—ScourKleen screen. Round 4.5/64″ or 1/20″.
Oats	1050 to 1250	3/16″–3/8″	If necessary	Adjustable	1/3–1/2 open	3/4 open	4	4	2/3–3/4 open	Front position	ScourKleen screen. Triangular .165″.
Peas—Field	250	3/8″–5/8″	Not required	Adjustable (preferred) or 9/16″ round hole			3	6	2/3 open	Center position	Slotted auger connections ScourKleen screen. Slotted 3/32″ x 3/4″ or 5/32″ x 3/4″ or 1/8″ x 3/4″.
Peas—Scotch Green	250	3/8″–1/2″	Not required	Adjustable	About 1/3 open	About 2/3 open	4 or 3	4 6	Wide open	Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Round 5/32″.
Peas—Willets Wonder	250	3/8″–5/8″	Not required	Adjustable (preferred) or 9/16″ round hole			3	6		Center position	Slotted auger connections 3/32″ x 3/4″ or 5/32″ x 3/4″ ScourKleen screen. Slotted 3/32″ x 3/4″ or 1/8″ x 3/4″.
Proso or Hog Millet	900	3/16″	2 to 4	Adjustable or 9/64″ round hole	Almost closed	About 1/2 open	6	1	About 1/2 open	Front position	ScourKleen screen. Round 1/20″ or 4.5/64″.
Radish Seed	500 to 700	3/16″	3 to 5	Adjustable or 5/32″ round hole	Closed to 1/4 open	1/3–1/2 open	6	1	About 1/2 open	Center position	ScourKleen screen. Round 1/2″ or 1/20″.
Rye	1300	3/16″–3/8″	If necessary	Adjustable	1/3 open	2/3 open	4	4	1/2–2/3 open	Center position	ScourKleen screen. Triangular .165″.
Sorghums Mild Maize	700 to 825 750 to 875 755 to 925	3/16″–5/16″ 3/16″–1/4″ 3/16″–1/4″	If necessary	Adjustable or 9/32″ round hole	1/4–1/2 open	2/3–3/4 open	3 or 4	6 4	Wide open	Rear position	Four or six double slat reel needed. ScourKleen screen. Round 4.5/64″ or 1/20″. Extension cutter bar.
Timothy	1300 to 1400	3/16″	3 to 5	Adjustable or 1/12″ round hole or 1/16″ round hole	Slightly opened	About 1/2 open	6	1	Closed	Front position	No-choke chaffer extension or 1/4″ mesh screen cover for tailings fingers—ScourKleen screen. Round 1/20″ or 4.5/64″.
Trefoil, Bird's Foot	1600	1/8″	3 to 5	1/16″ round hole	Slightly open	About 1/2 open	6	1	Closed	Front position	No-choke chaffer extension or 1/4″ mesh screen cover for tailings fingers—ScourKleen screen. Round 4.5/64″ or 1/20″.
Vetch	900	1/4″–1/2″	Not required	Adjustable	1/3–1/2 open	2/3 open	4	4	2/3–3/4 open	Front position	ScourKleen screen. Slotted 9/64″ x 3/4″.
Wheat	1000 to 1500	3/16″–3/8″	If necessary	Adjustable	1/3–1/2 open	2/3 open	4	4	2/3–3/4 open	Front position	ScourKleen screen. Triangular .165″, .171″, .140″, or .125″.

ADJUSTMENTS AND SERVICE

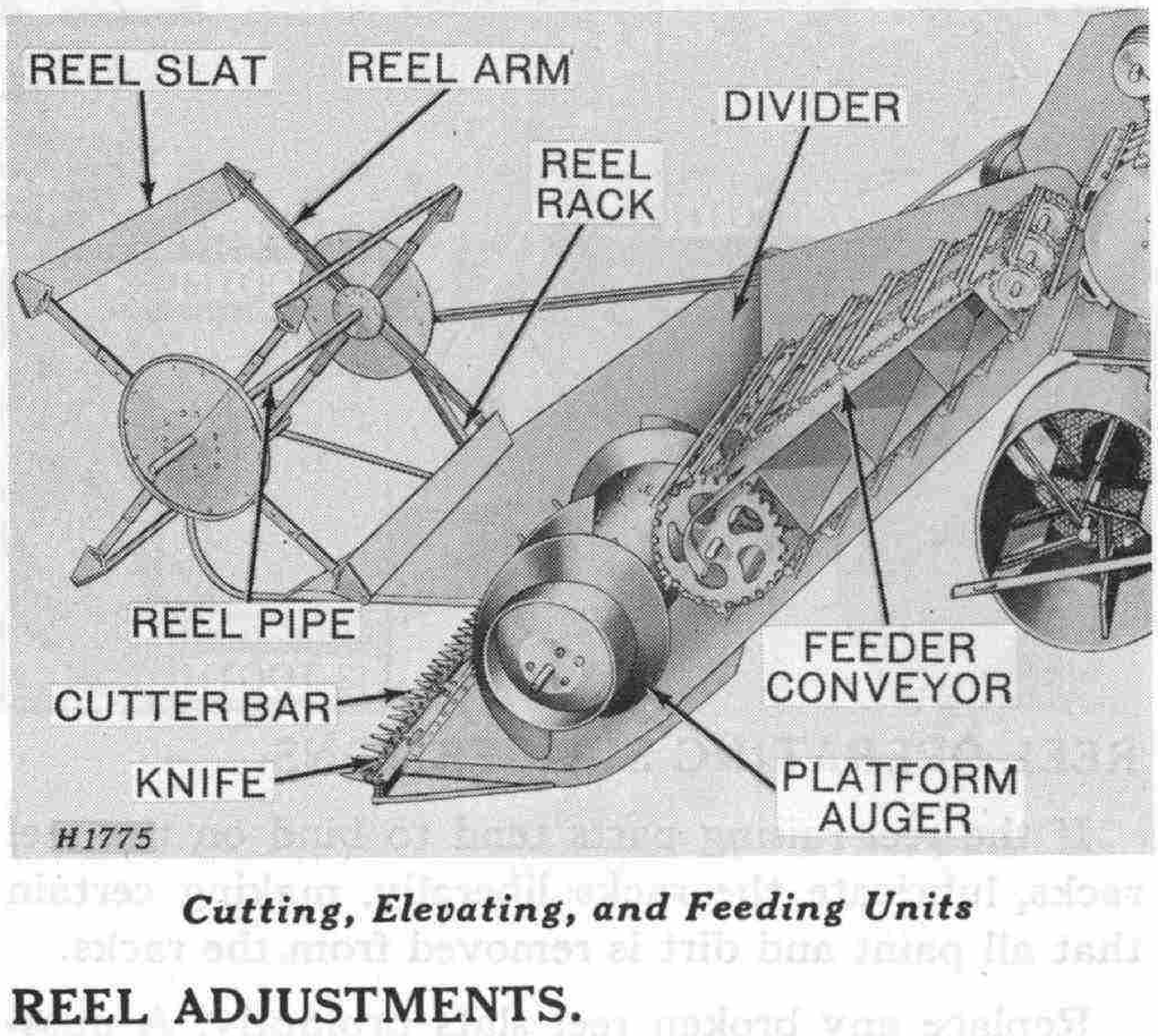
Simple and positive adjustments for handling a wide variety of crops under varying conditions have been built into this combine. These adjustments, even though simple, have an important bearing on the quality of the work done.

It is impossible to lay down hard fast rules for any particular crop or condition, because no given combination of combine settings will apply in all cases. The same crop under different conditions may require entirely unrelated adjustments. The following explains how the adjustments are made and tells what a change in the adjustments will accomplish. It is the operator's job to use his best judgment in applying them.

In addition to having the combine adjusted properly, there are cases when some special attachment will help materially in doing a good job. Throughout this portion of the manual, items of special equipment for the different components of the combine are illustrated and described.

REEL

The reel slats gather in the straw, hold it until it is cut by the knife, then deliver it to the platform and auger. The reel must be square, level, and at the proper height and position.



Cutting, Elevating, and Feeding Units

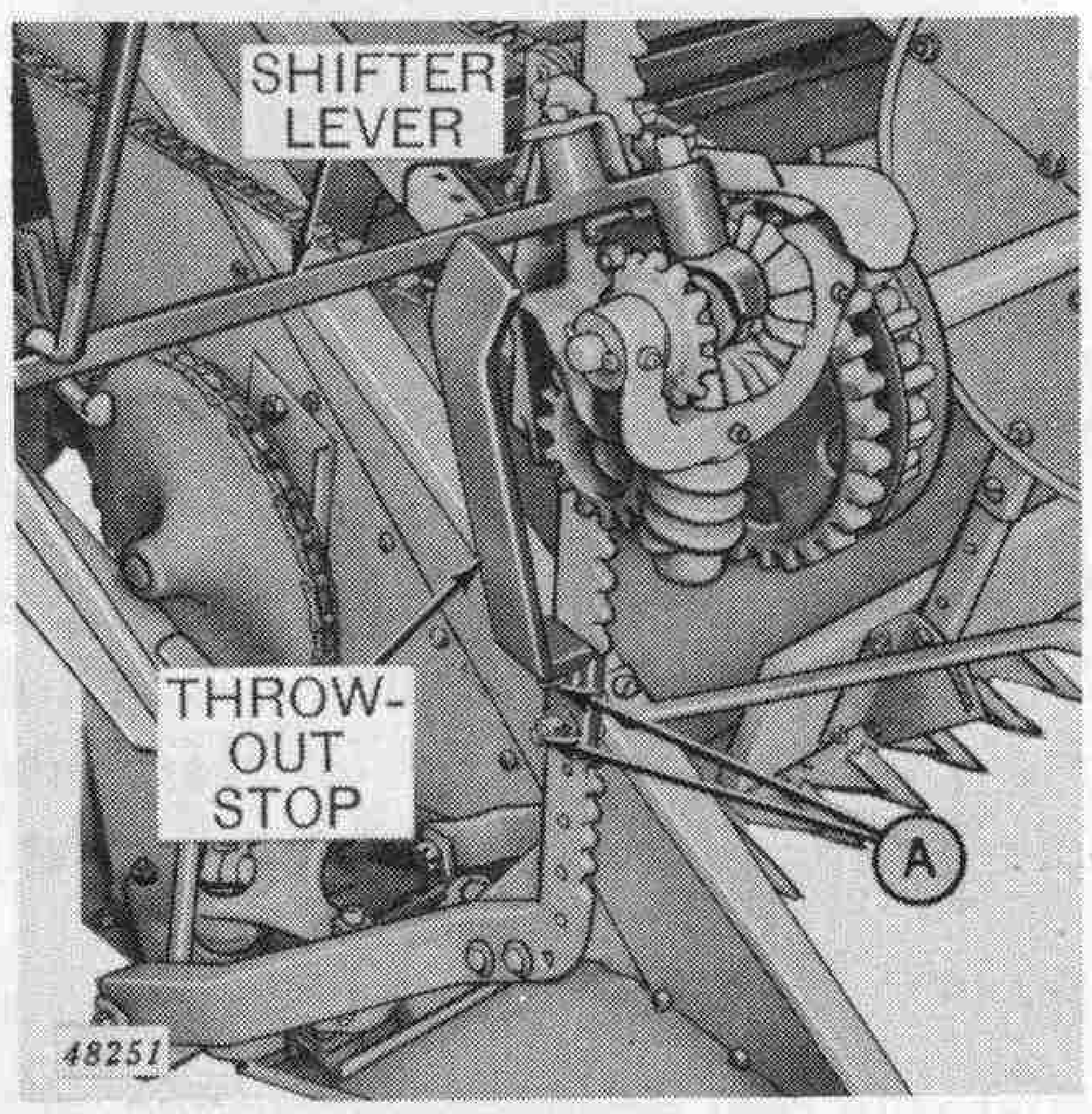
REEL ADJUSTMENTS.

The exact position of the reel depends upon the height of grain, quantity of straw cut, and condition of straw. Ordinarily, the reel should be set so the slats, when in their lowest position, will strike the straw 6 to 10 inches above and slightly ahead of the knife.

In grain that is down and badly tangled, the reel should be set low and just above the knife. In this position, the reel sweeps material back onto the platform.

REEL HEIGHT ADJUSTMENT (POWER-CONTROLLED REEL.)

Raising the Reel. To raise the reel, move the shifter lever to the rear.



Lowering the Reel. To lower the reel, move the shifter lever forward.

The speed with which the power-controlled reel raises or lowers is determined by the travel speed of the combine.

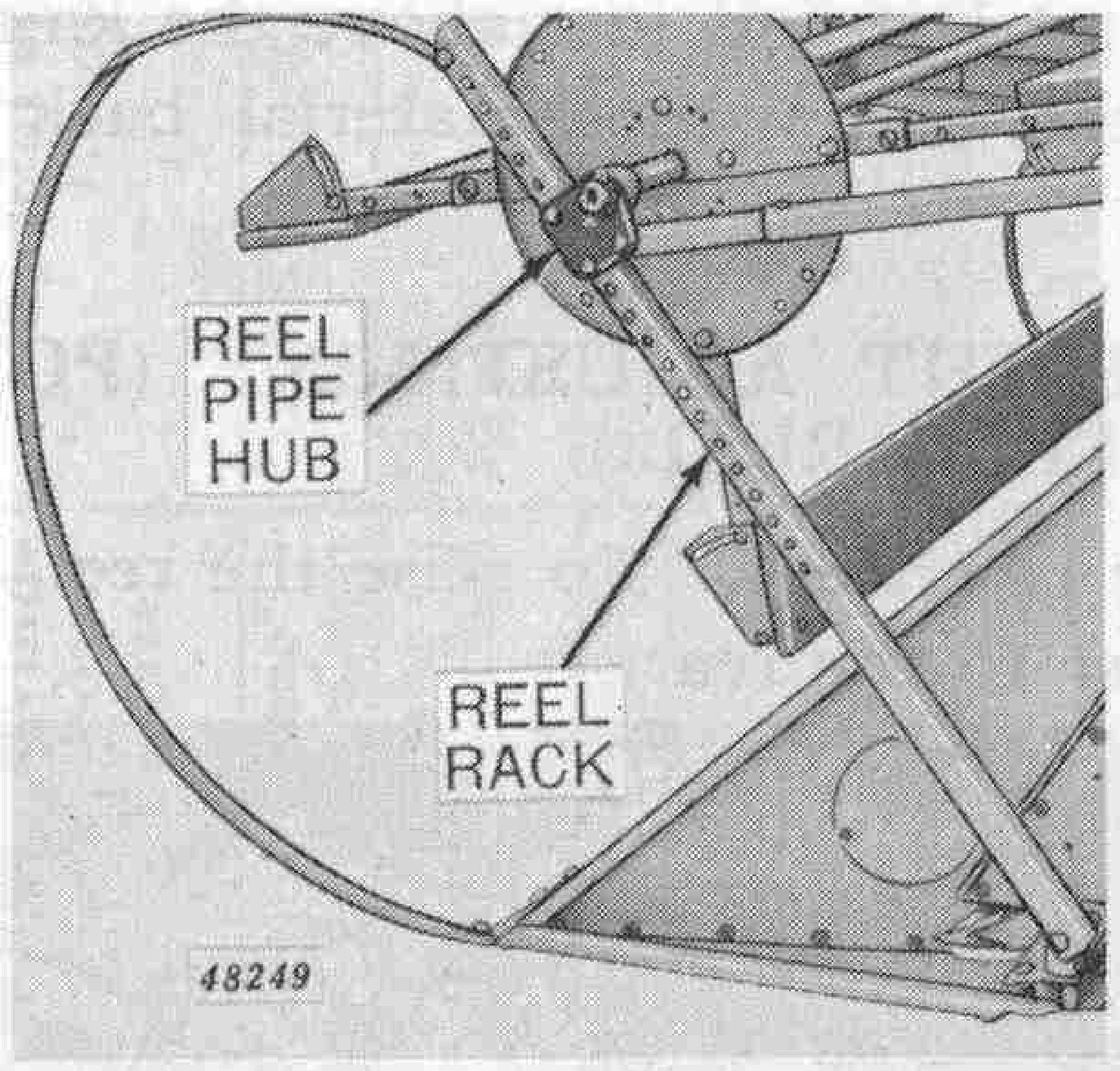
The reel can be raised or lowered by hand by disengaging the reel drive sprocket on the right-hand main wheel and rotating the reel by hand while engaging the shifter lever.

The throw-out stop should be attached in the proper holes and adjusted at "A" so the downward movement of the reel will be stopped before reel slats strike the auger or cutter bar.

Leveling the Reel. The reel must be level for it to feed the grain uniformly to the knife and platform. If the reel is not level, raise it to the top of the reel racks. This will automatically level the reel, and the reel height then can be set at the desired location.

REEL HEIGHT ADJUSTMENT (MANUALLY CONTROLLED REEL)

Raise or lower the reel by moving the reel pipe hubs to different sets of holes on the reel racks. *NOTE: When moving the reel up or down, be sure to use the corresponding set of holes in each rack so the reel pipe will be level.*

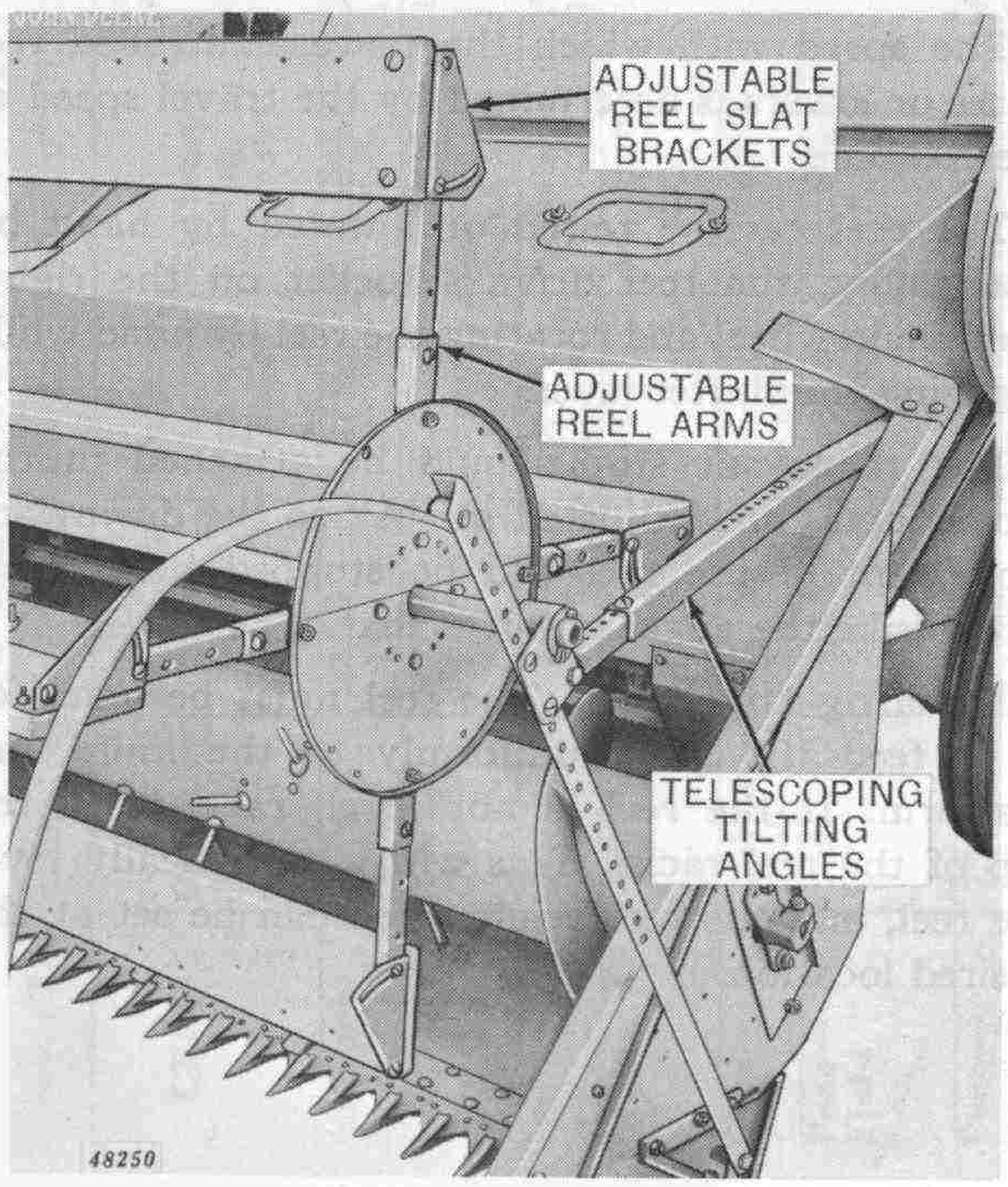


Forward and Backward Adjustment.

The reel can be moved forward or backward by using different sets of holes in the telescoping tilting angles. *NOTE: With a manually controlled reel, the right-hand tilting angles should be assembled so they are one hole shorter than the left-hand tilting angles.*

REEL ARMS.

The adjustable reel arms are provided with sets of holes to provide for a 41-inch, 36-3/8-, or a 31-3/4-inch diameter reel, depending on the size desired.



REEL SLAT POSITION.

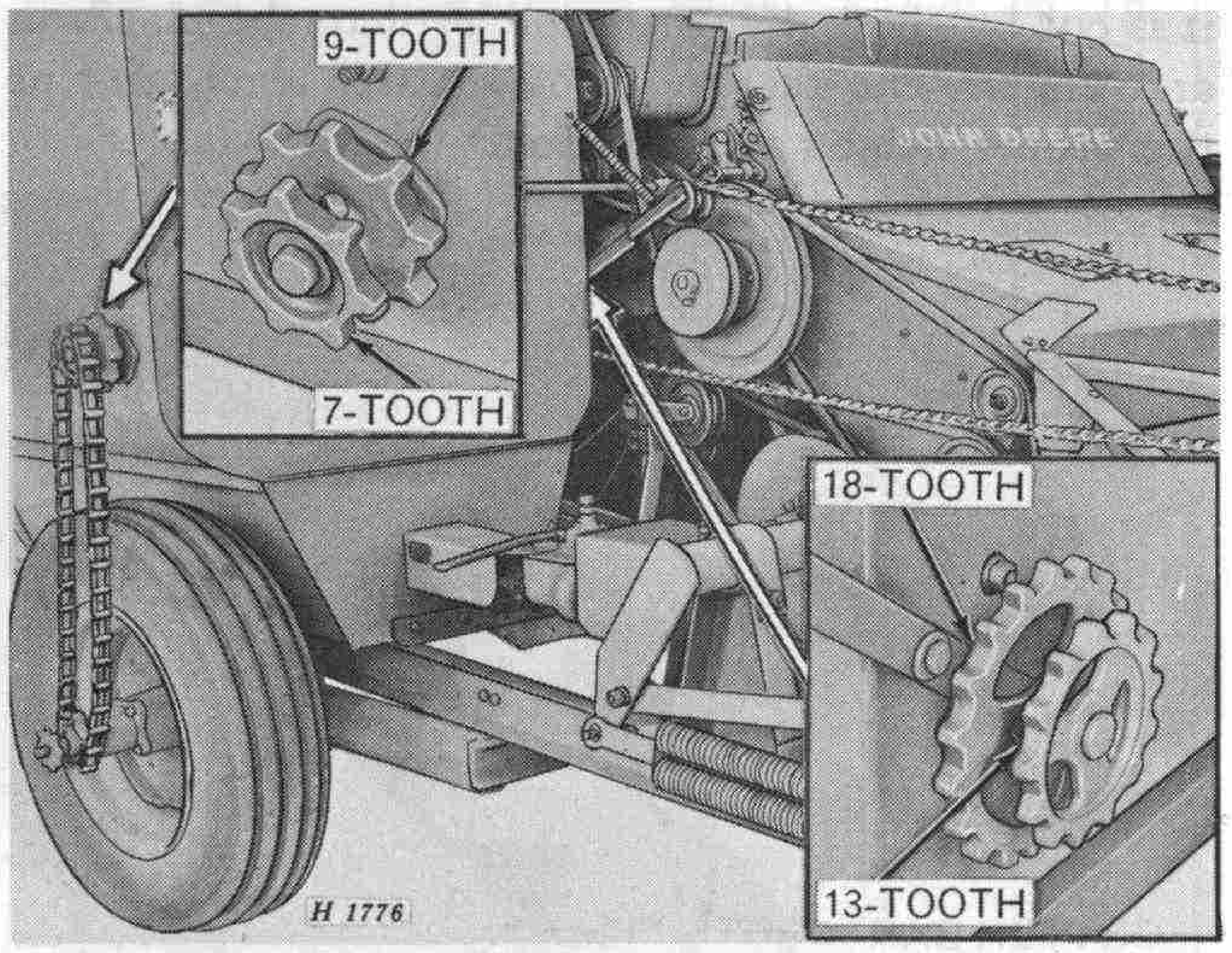
The reel slats are attached to the reel arms with adjustable brackets. The pitch of the reel slats can be adjusted so the inner edge of the slat is away from the reel arm. This aids in placing the heads of the grain onto the platform.

REEL SPEEDS.

The reel is ground-driven from the right-hand wheel. Ordinarily, varying the reel speed with the ground speed enables the reel to handle the crop being combined. However, when traveling at high speeds, it is often necessary to slow down the reel. The minimum low speed can be obtained by installing the drive chain onto the 9-tooth sprocket on the right-hand end of the reel jackshaft and the other other drive chain onto the 13-tooth sprocket on the left-hand end of the reel jackshaft.

Maximum high speed can be obtained by using a combination of the 7-tooth and the 13-tooth sprockets or the 9-tooth and the 18-tooth sprockets.

A good rule to remember is that the combinations of sprockets only determine the minimum and maximum speed ranges and that ground speed determines the actual reel speed.



REEL OPERATING SUGGESTIONS.

If the reel raising parts tend to bind on the reel racks, lubricate the racks liberally, making certain that all paint and dirt is removed from the racks.

Replace any broken reel slats promptly. A missing slat will cause uneven delivery to the platform auger and uneven feeding to the cylinder.

In grain infested with tall weeds, the weeds will tend to wrap around the reel. To prevent this, order the Weed Bar Attachment shown on page 29.

REEL SPECIAL EQUIPMENT

REEL END SHIELDS.

Reel end shields are available for use on 4- or 6-slat reels. Reel end shields reduce the possibility of straw winding and being carried around the reel. Order the following from your John Deere dealer:

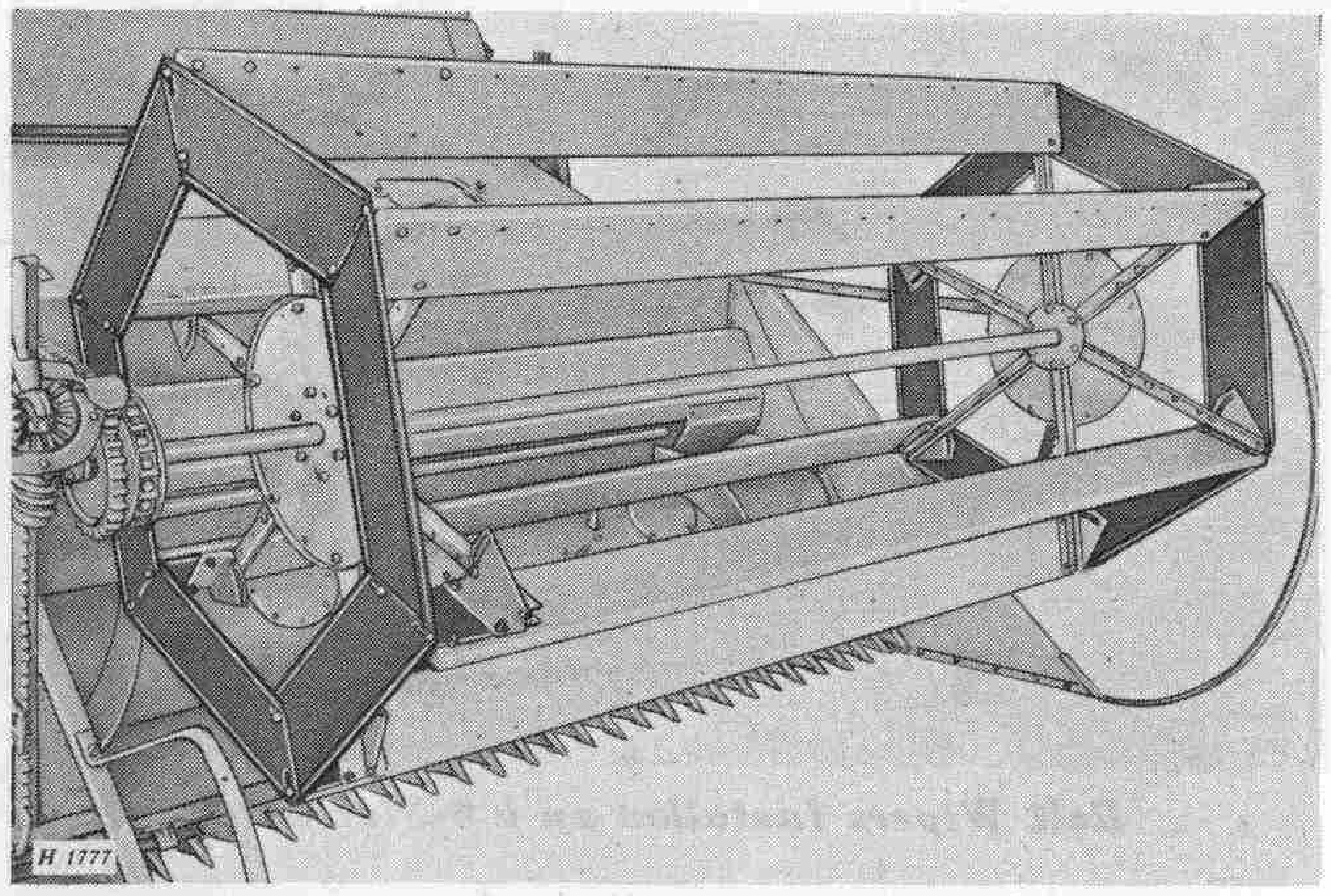
15848 HH	Reel End Shields (6-slat reel). (*NOTE: If reel end shields are desired for both ends, order two packages 15848HH.*)
15092 HH	Reel End Shield Brackets (required for right-hand end of reel only).
BH 10233 H	Reel End Shields (4-slat reel).
BH 10235 H	Reel End Shield Brackets—right-hand side only (4-slat reel).

DOUBLE SLAT REEL

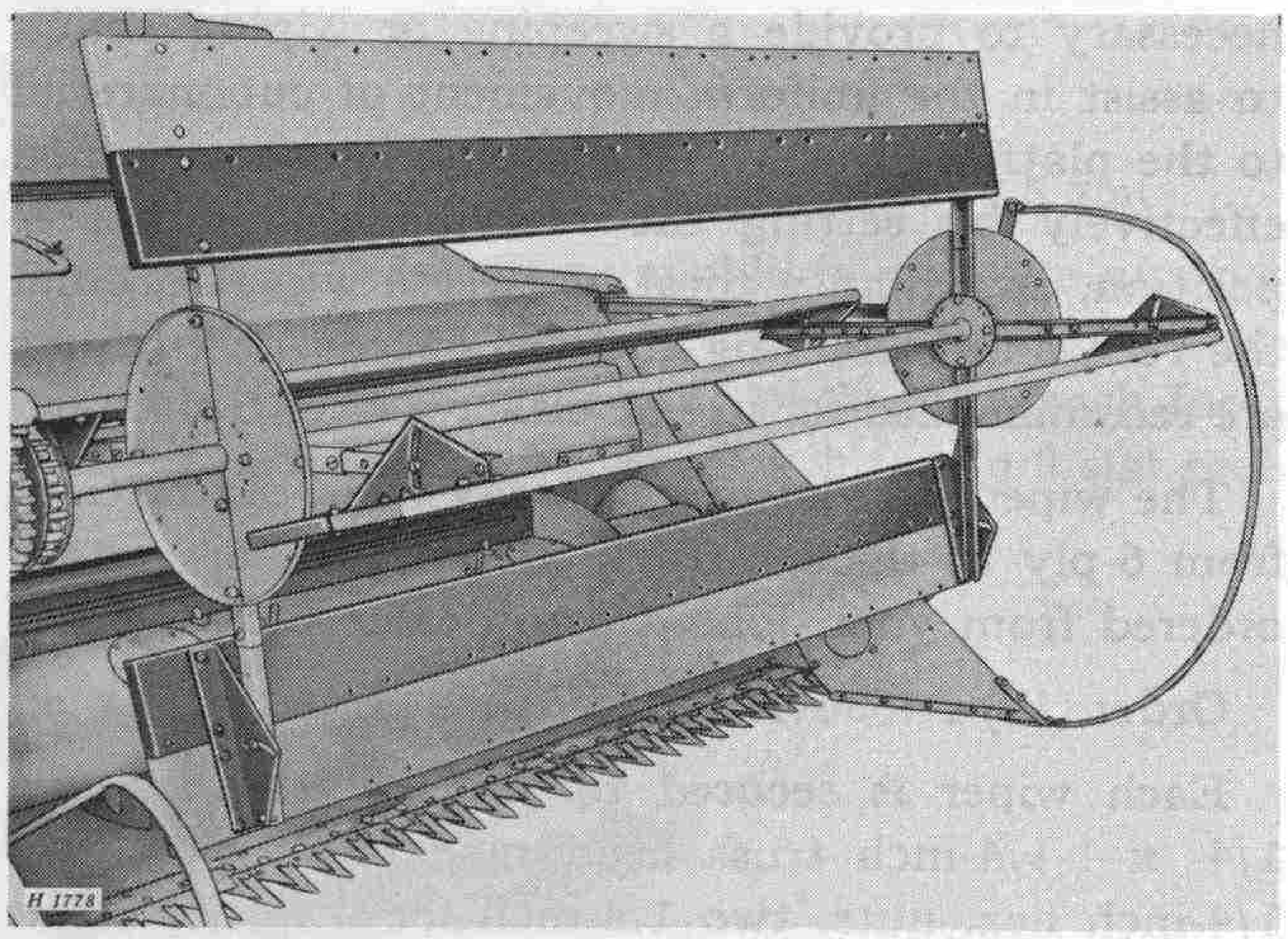
Double slat reel is used to prevent grain heads from hanging on the reel slats and being thrown to the ground in front of the platform. Four, six, or eight-slat reels may be equipped with double slats. Order the following packages from your John Deere dealer:

15859 HH	Reel Slat Adjusting Brackets (Order two for 4-slat reel, three for 6-slat reel, and four for 8-slat reel).	
15849 HH	Bundle of Two Reel Slats	Order as Required.
15837 HH	Bundle of Four Reel Slats	

It pays to be careful for your own sake!
Accidents can . . .
Pain
Lame
Maim
and cost you money!



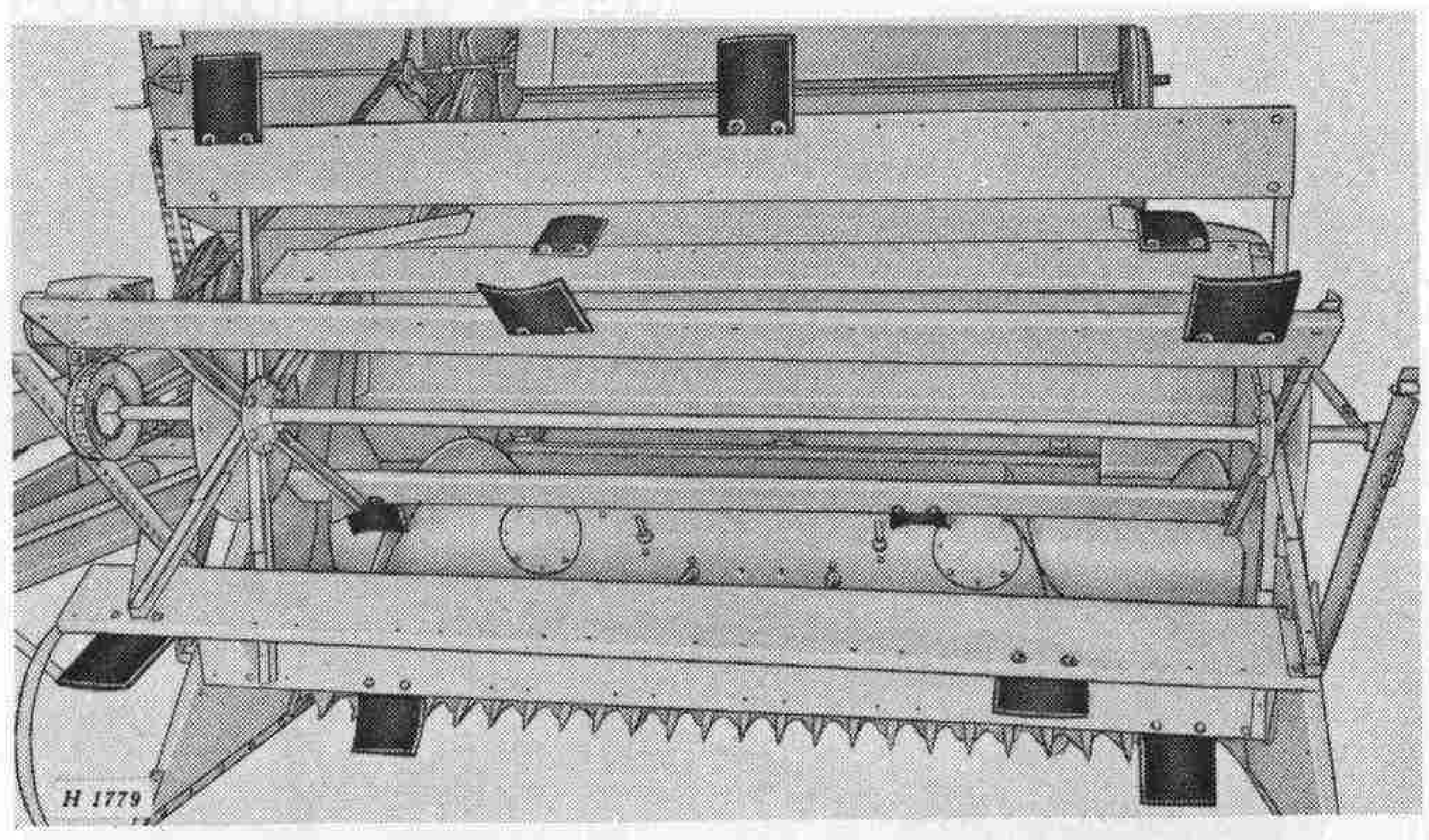
Reel End Shields, 6-Slat Reel in 41-Inch Diameter Position Only



4-Slat Reel with Double Reel Slats

Be Careful
THE LIFE YOU SAVE MAY BE YOUR OWN.
National Safety Council

REEL SPECIAL EQUIPMENT—Continued



Belt Wipers Installed on a 6-Slat Reel

BELT WIPERS FOR REEL SLATS.

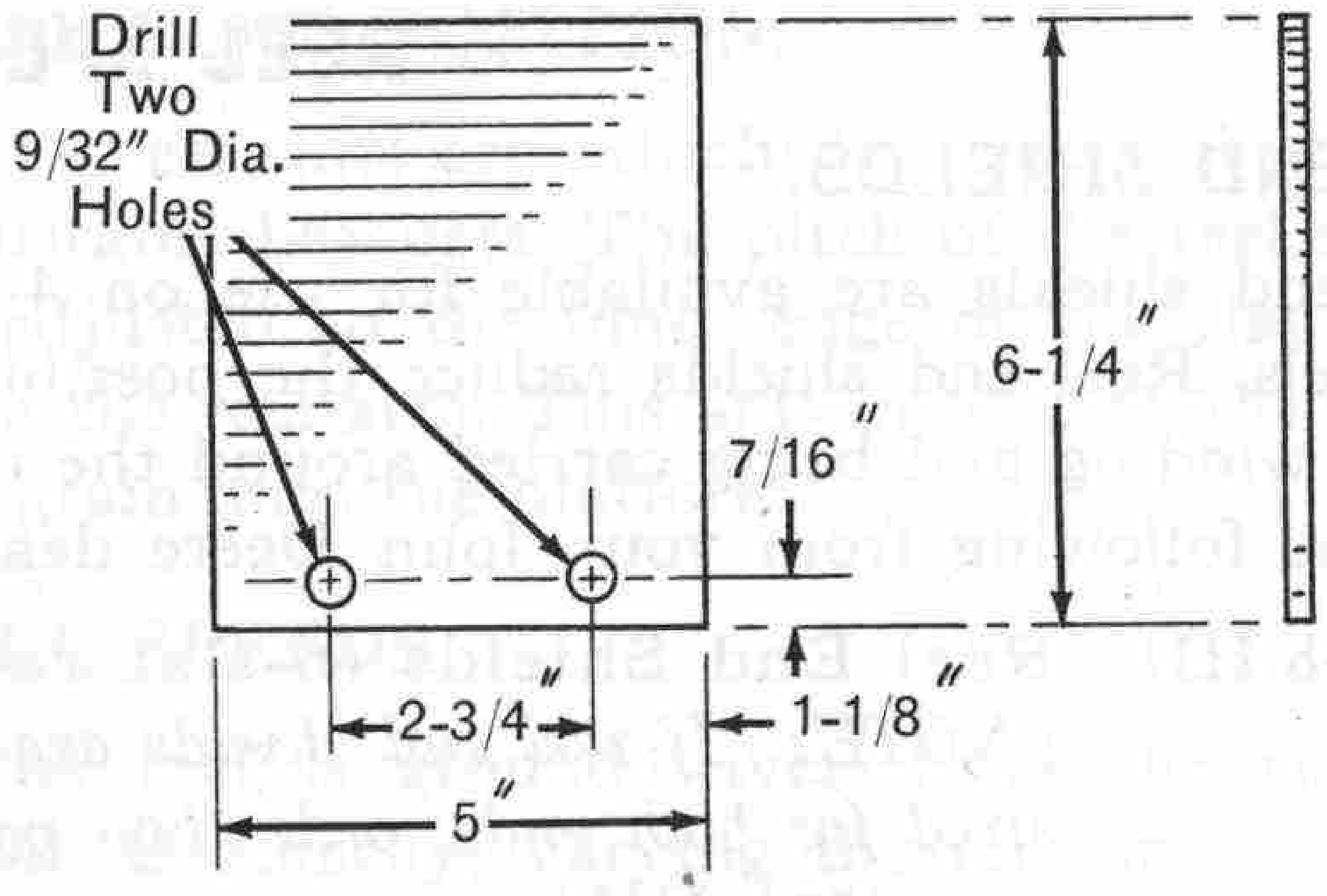
When operating in short crops, it is sometimes necessary to provide a sweeping or wiping action to assist in the uniform movement of cut material to the platform auger. This wiping is accomplished effectively by setting the reel in small diameter position, spiralling a total of twelve wipers around the reel, and increasing the reel speed. Belt wipers are recommended for use on either a 4- or 6-slat reel.

The wipers can be made locally from old belting, from 6-ply or thicker truck tire carcass, or can be ordered from your John Deere dealer as follows:

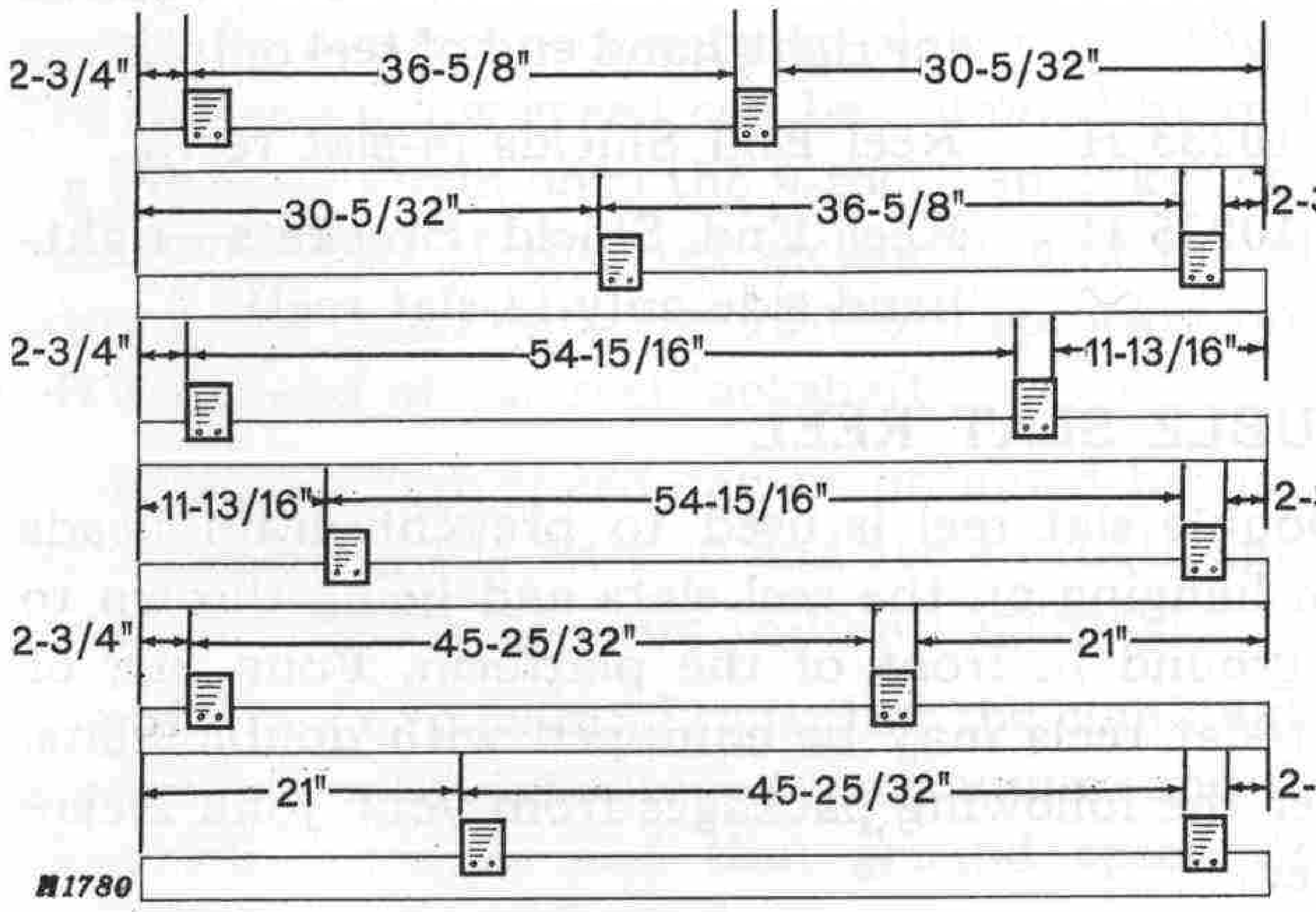
Order (12) P46304H Belt Wipers (4- or 6-slat reel)

Each wiper is secured to the reel slat by two 1/4- x 1-1/4-inch truss head machine screws, two 1/4-inch hex. nuts, two 1/4-inch lock washers, and four No. 16, 9/32- x 1-inch flat washers.

Keeping your equipment in proper adjustment will help to keep it operating efficiently and economically.

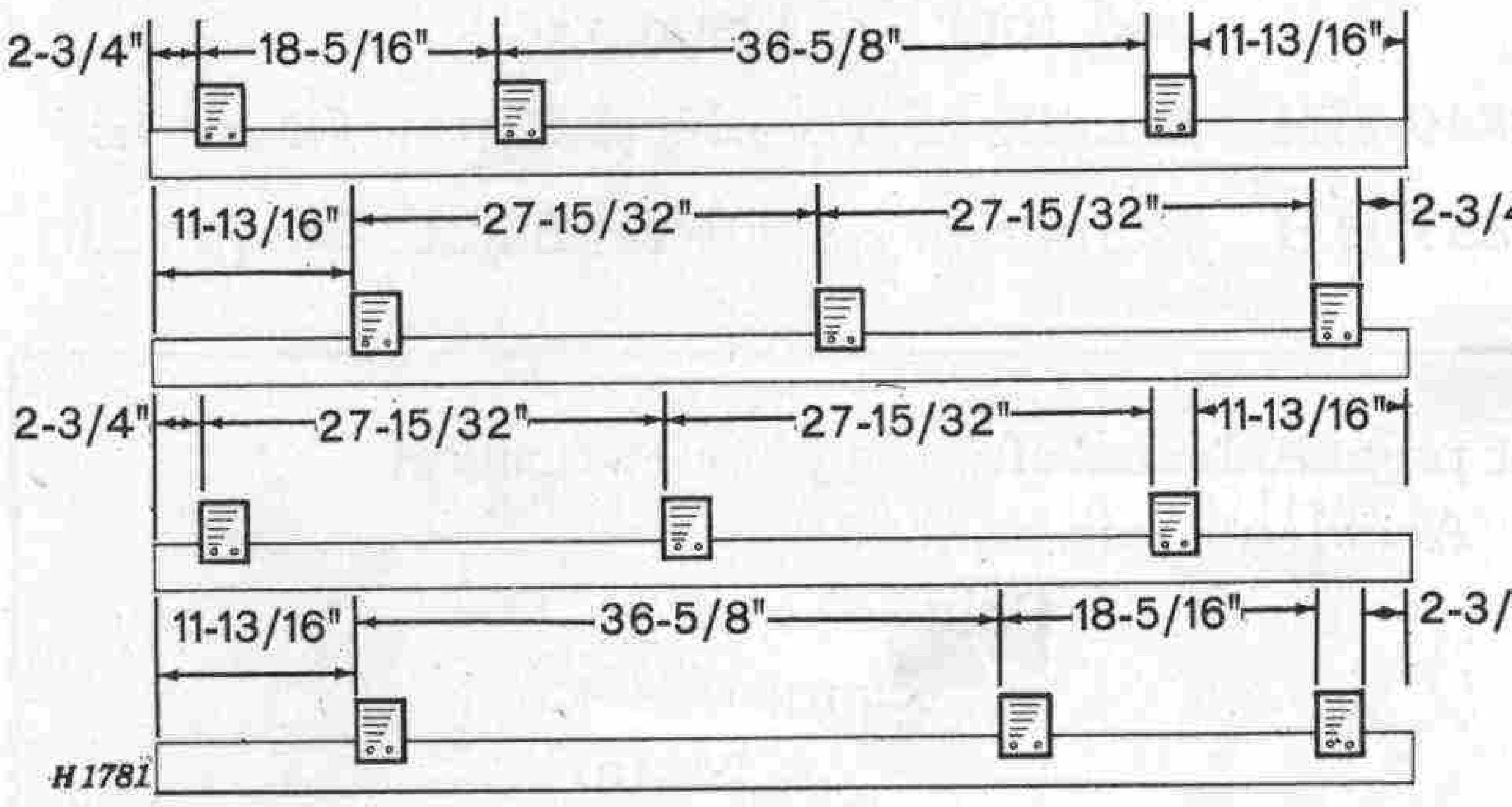


42496 DETAIL OF WIPER



H1780

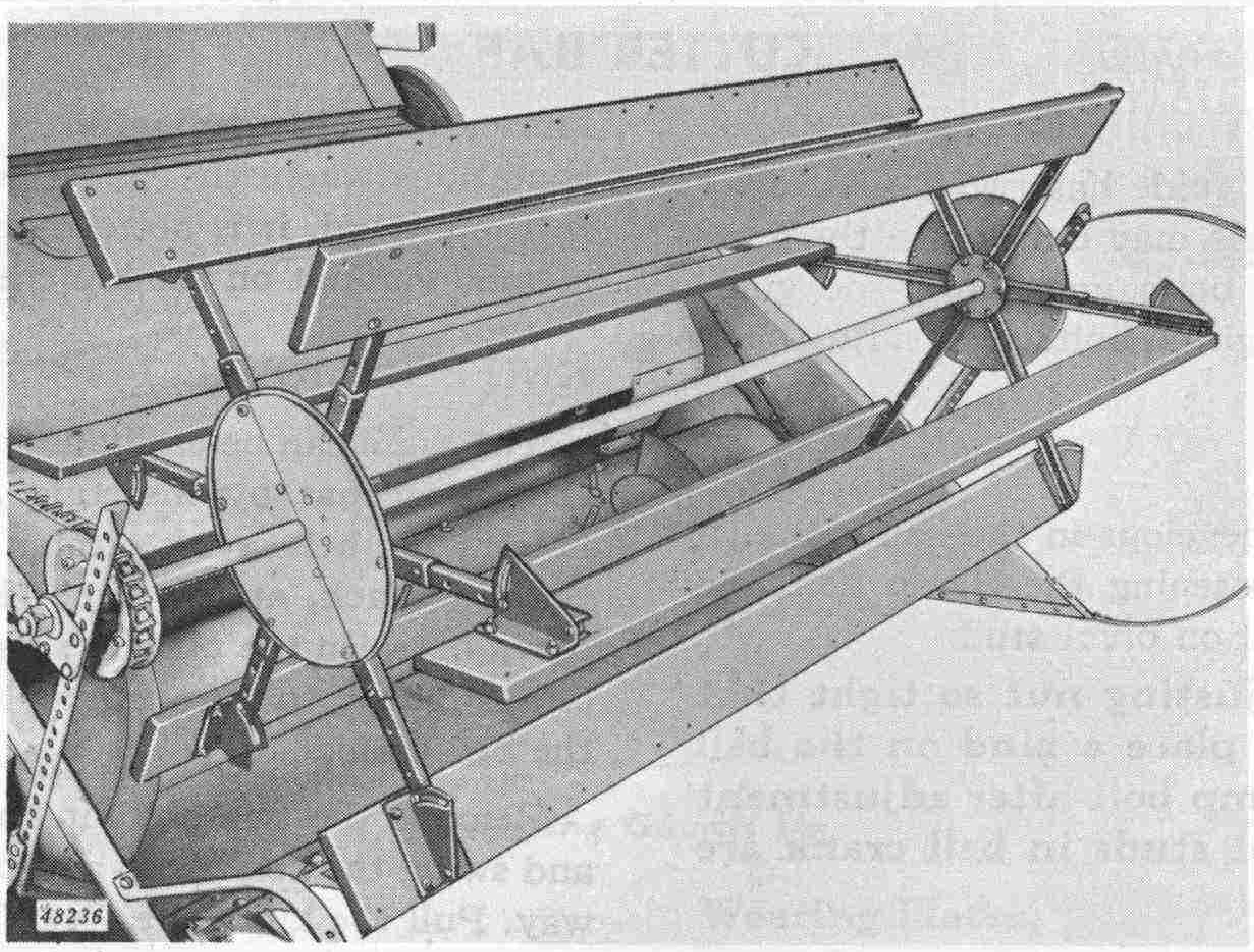
Position of Belt Wipers Installed on 6-Slat Reel



H1781

Position of Belt Wipers Installed on 4-Slat Reel

Do not grease, oil, or adjust a machine that is in motion.

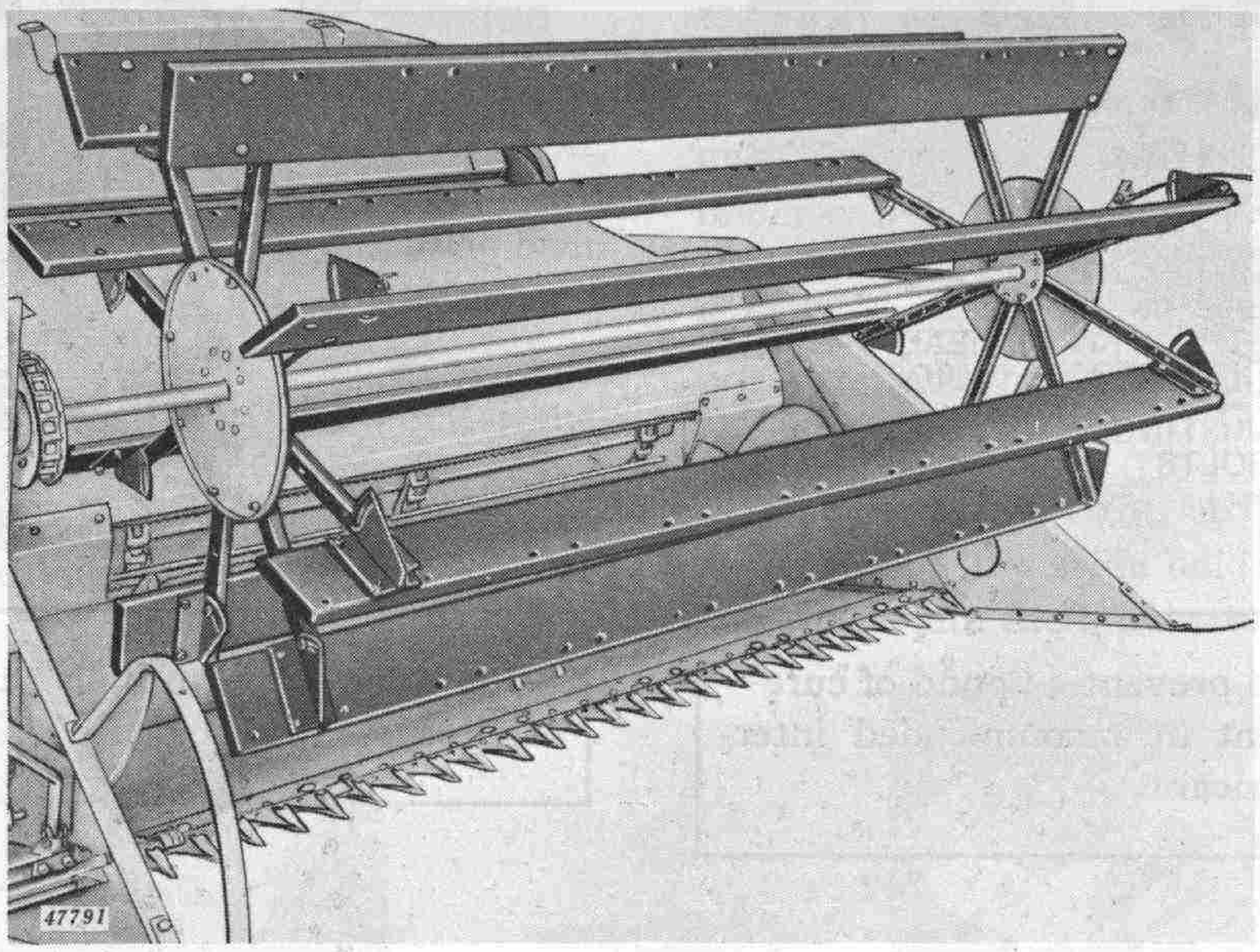


6-Slat Reel

6 AND 8-SLAT REEL ATTACHMENT.

In extremely short straw, a 6 or 8-slat reel will provide a steadier, more uniform flow of grain to the cylinder than the regular 4-slat reel. The 4-slat reel can be converted into a 6 or 8-slat reel as shown. The reinforcing plates or spiders for the reel arms have holes to accommodate 2, 3, 4, 6, or 8 slats.

Extra reel arms are available in package number BH10266H. Extra slats are available in package number 15849HH. Order one package of each for a 6-slat reel or two packages of each for an 8-slat reel.



8-Slat Reel

CUTTER BAR

KNIFE HEAD FRONT GUIDE.

The knife head front guide has two slotted holes to take up any wear that may develop in the knife head. Loosen the two bolts and move the guide back as necessary. Retighten bolts after adjustment has been made.

BELL CRANK.

If vertical end play develops in the bell crank, it can be corrected by loosening the clamp bolt and tightening adjusting nut on pivot stud.

Do not tighten adjusting nut so tight that it has a tendency to place a bind on the bell crank. Retighten clamp bolt after adjustment has been made. Pivot studs in bell crank are replaceable.

KNIFE LUBRICATION.

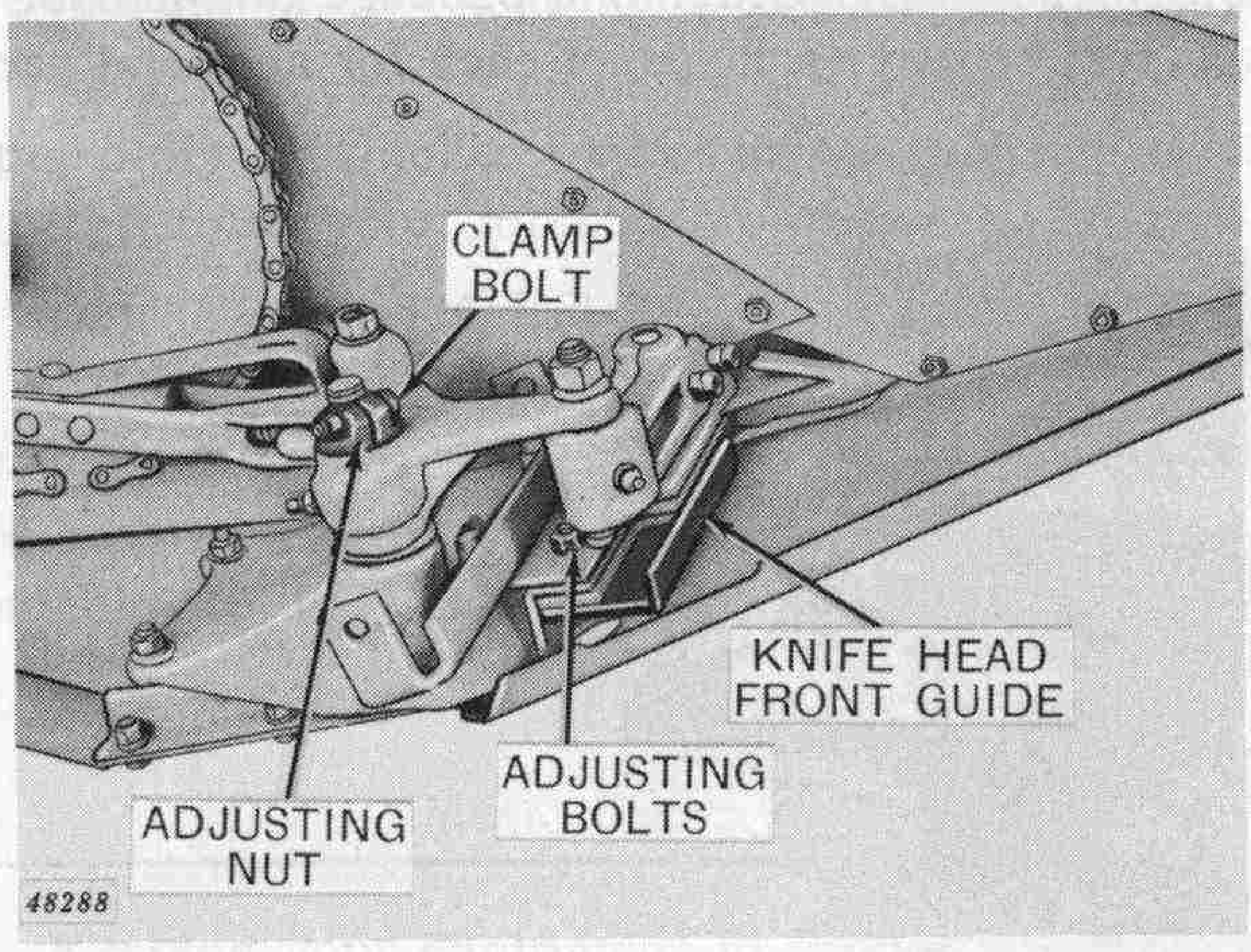
The amount of lubricant to use on a knife depends on the conditions in which the work is being done. When the grain is being topped and the cutter bar is carried some distance from the ground, liberal lubrication with engine oil is permissible. In many conditions where the cutter bar must operate close to the ground, it is better not to use oil, except for a small amount on the knife holders.

KNIFE REMOVAL.

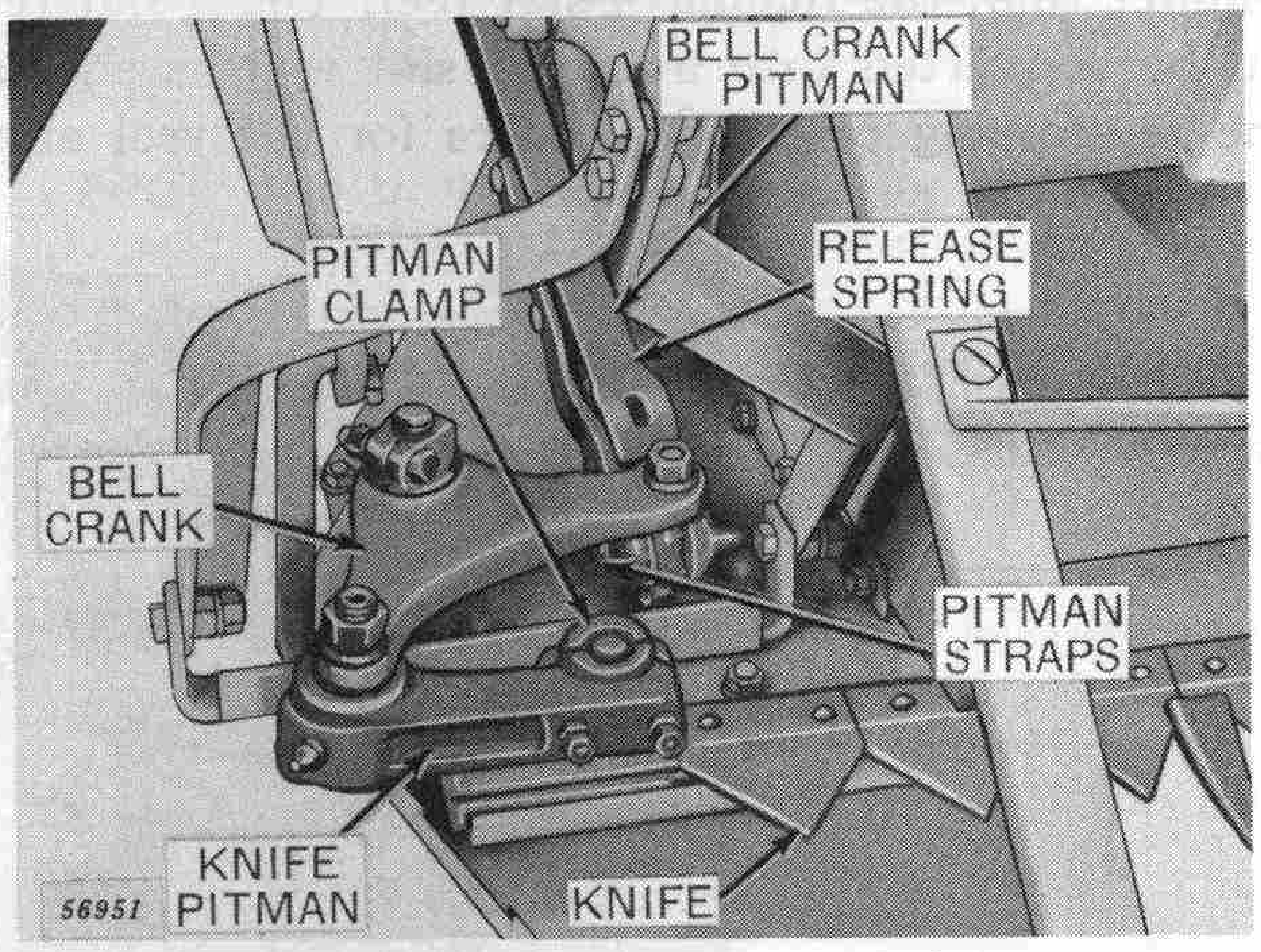
The knife can be easily and quickly removed from the cutter bar by inserting a punch through the hole in the bell crank pitman release spring to pry the fork back, at the same time forcing the spring down between the pitman straps to hold the pitman straps apart so the pitman can be released from the bell crank.

Remove the two bolts in the knife pitman clamp and swing the bell crank and pitman back out of the way. Pull the knife out.

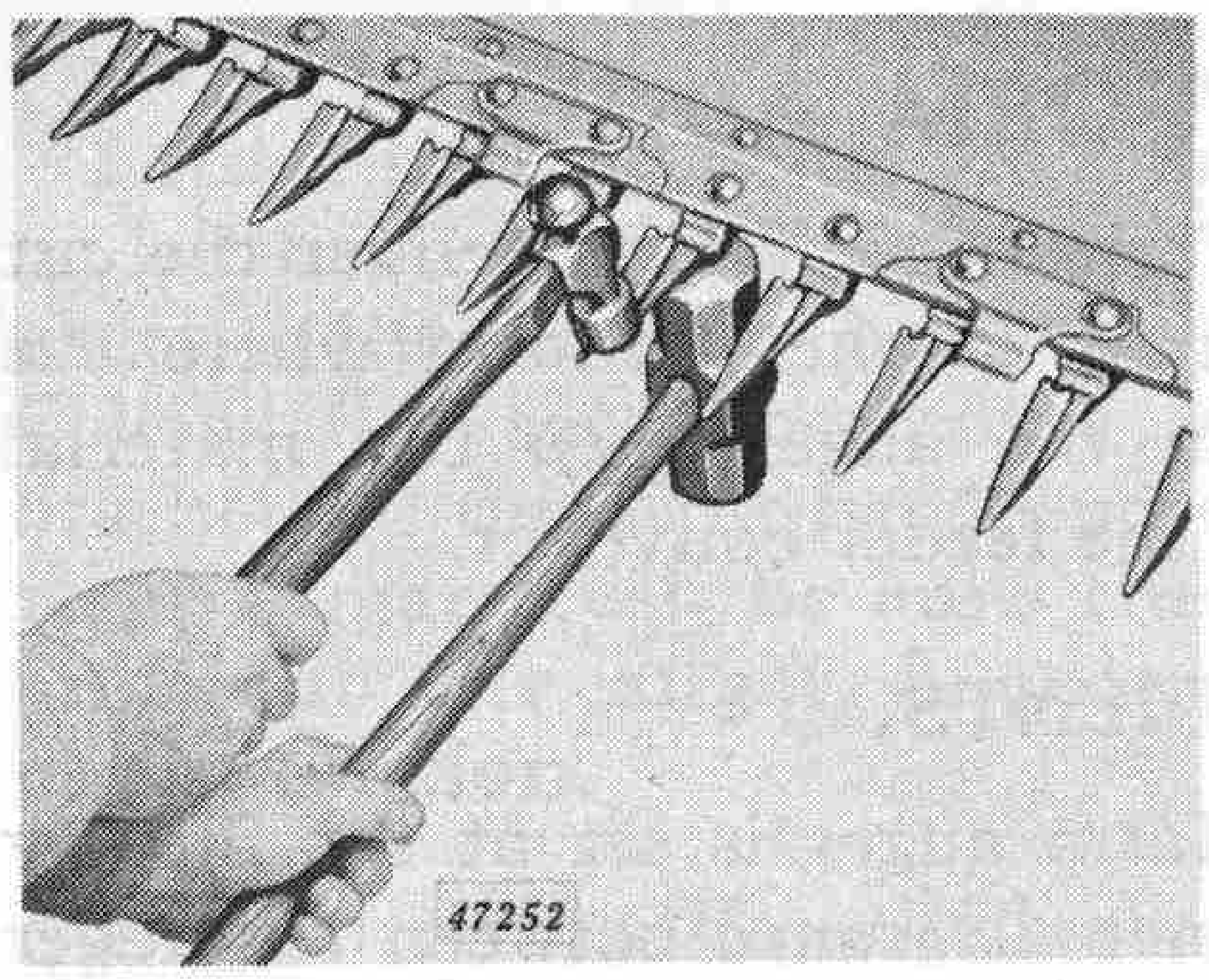
IMPORTANT: When reinstalling knife, be sure the knife sections are centered between knife guards, with the knife in the center of its stroke, before attaching the knife pitman. Tighten pitman clamp bolts evenly.



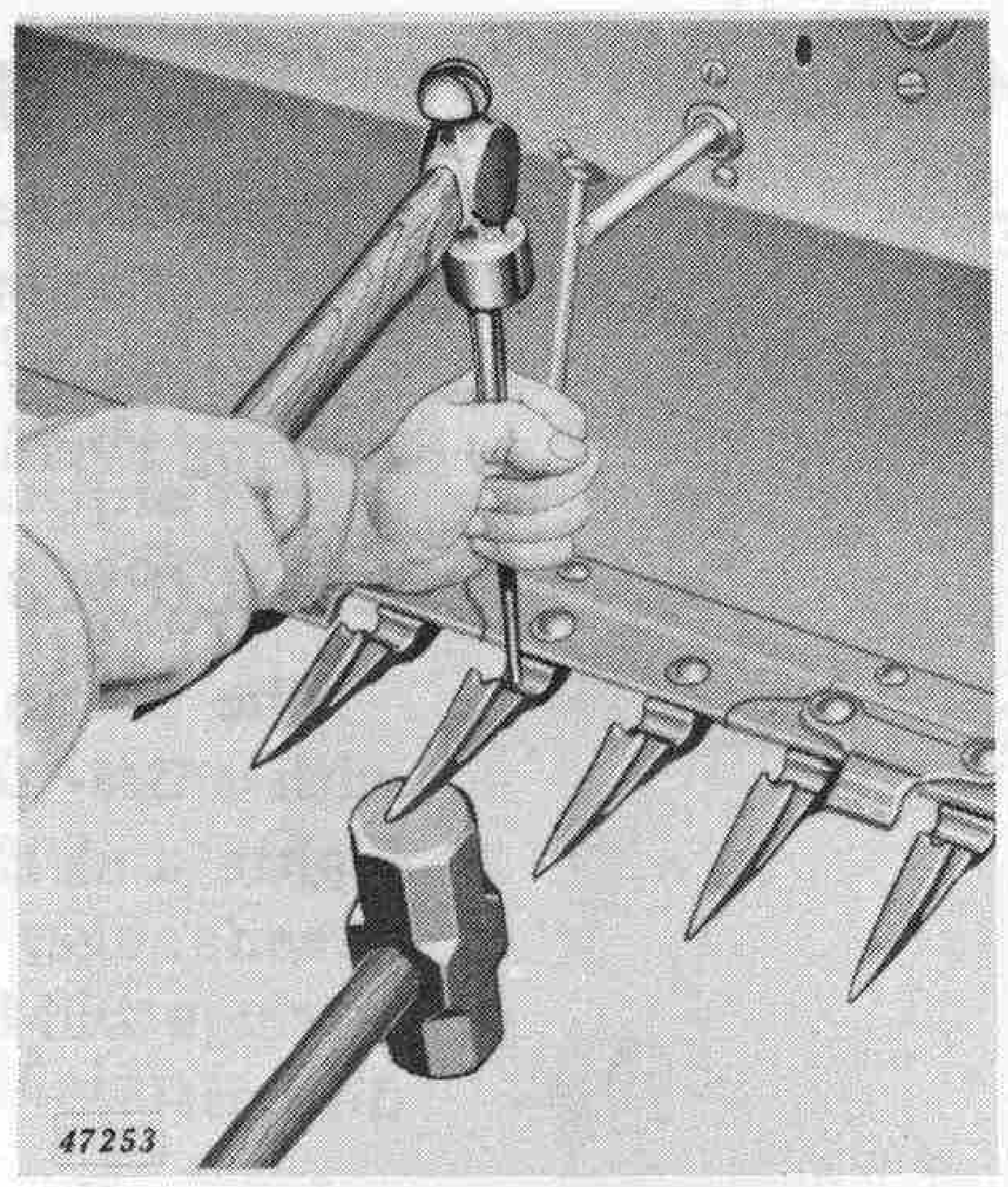
An ounce of care can prevent a pound of cure—service your equipment at recommended intervals, using correct lubricant.



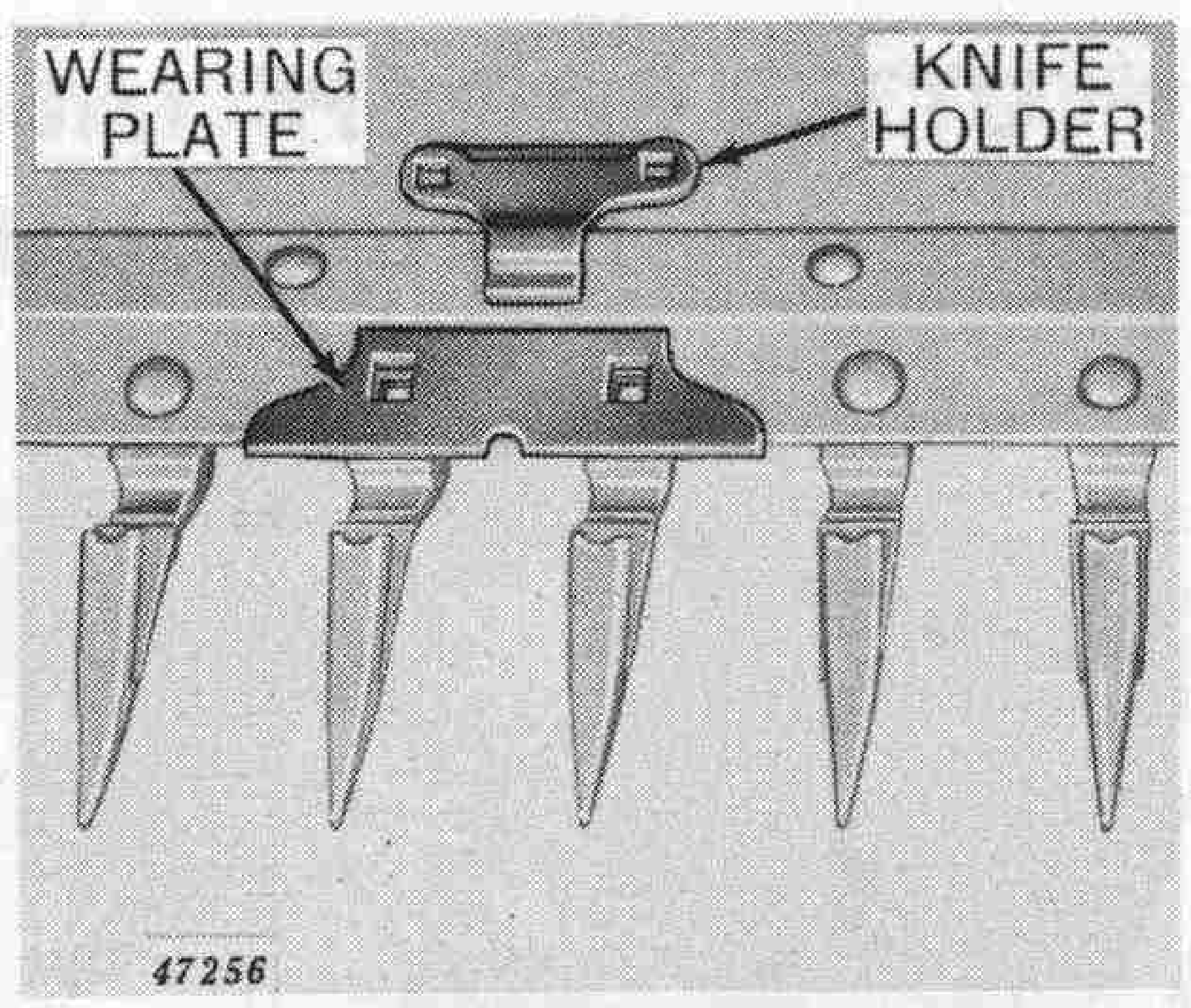
An accident is usually caused by someone's carelessness, neglect, or oversight.



Setting Guards Down



Setting Guards Up



Wearing Plate

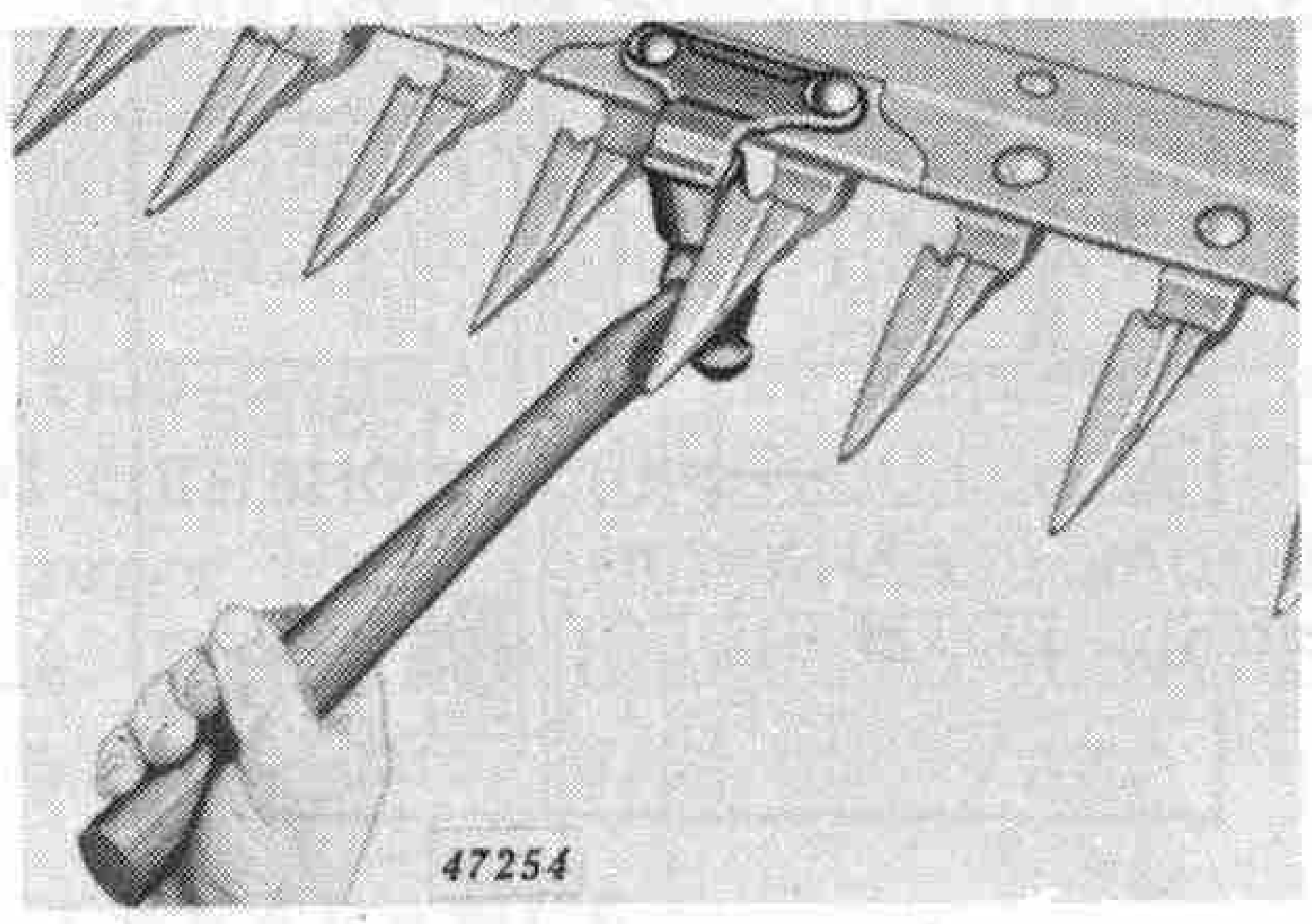
CUTTER BAR REPAIR.

The knife should move smoothly in the cutter bar and every knife section should rest on the guard plate in position to make a shear cut. This means the guards, guard plates, wearing plates, and knife holders must be in good condition and correctly set. If these parts become loose or worn, the knife will flop around in the cutter bar, chewing and tearing the crop instead of cutting it.

Guard Alignment.

Set each guard up or down to obtain a shear cut between the knife section and the guard plate. Bolt the guards tight and strike them at the thick part just in front of the guard plates. Do not pound down the guard lips as the knife might bind. Retighten the bolt as each guard is aligned.

Disregard the position of the guard points; the guard plates must be in line. However, the guard points should be kept sharp. Replace guard plates when worn or dull and align guards to give a shear cut on every plate.



Setting Knife Holder Up

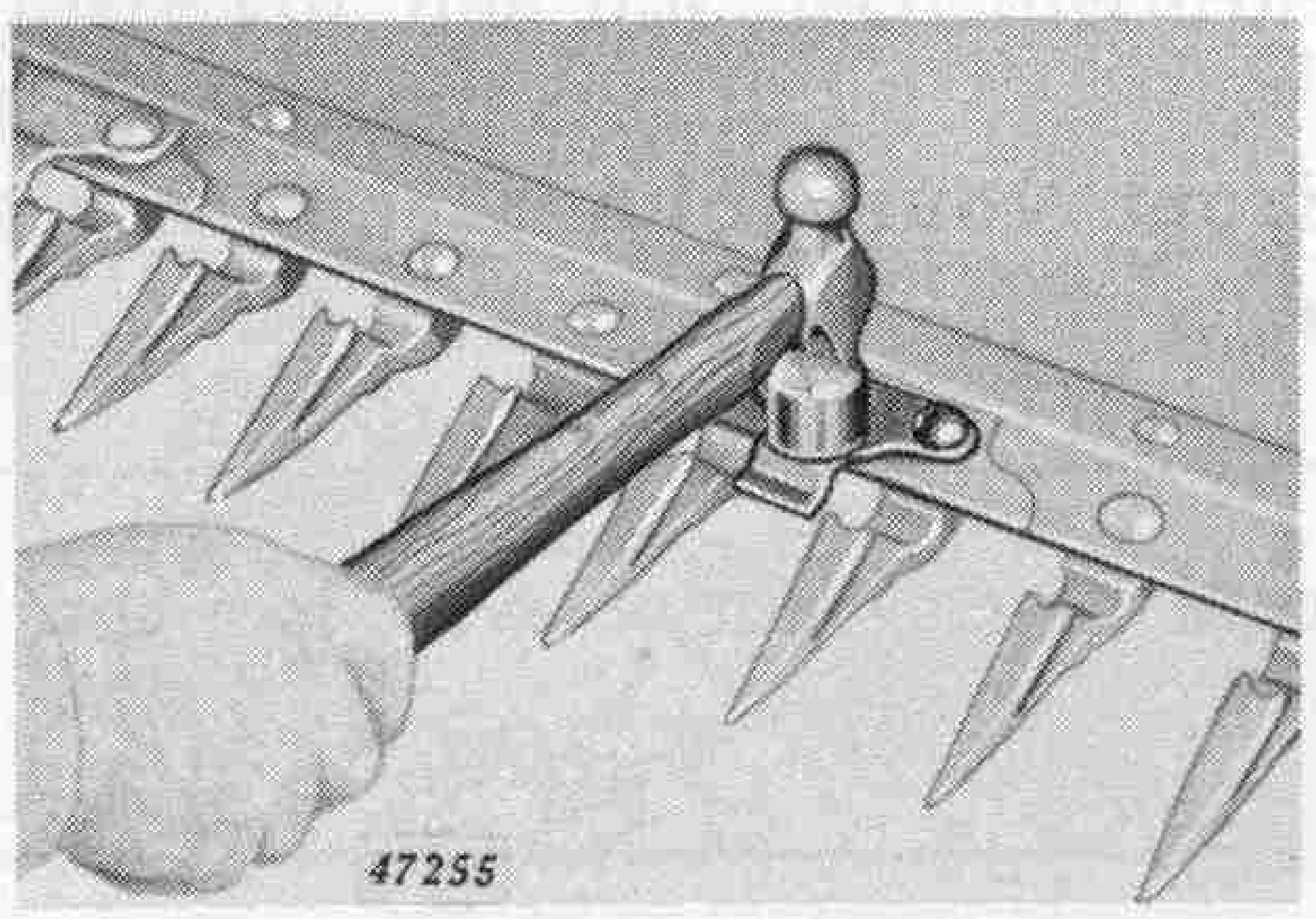
Wearing Plates.

Adjust or replace wearing plates to take up wear on knife back and to reduce play of knife and guards. However, do not move the knife so far forward that the sections strike the guards. Turned down edges of wearing plates must line up with each other to give the knife back a straight bearing along its entire length.

Knife Holders.

Knife holder must hold sections down against guard plates but must also permit knife to slide under it without binding. Set the knife holders after the guards are aligned. Never bend down a knife holder when the knife is under it. Tap the holder up or down until the knife will just slide under it without binding.

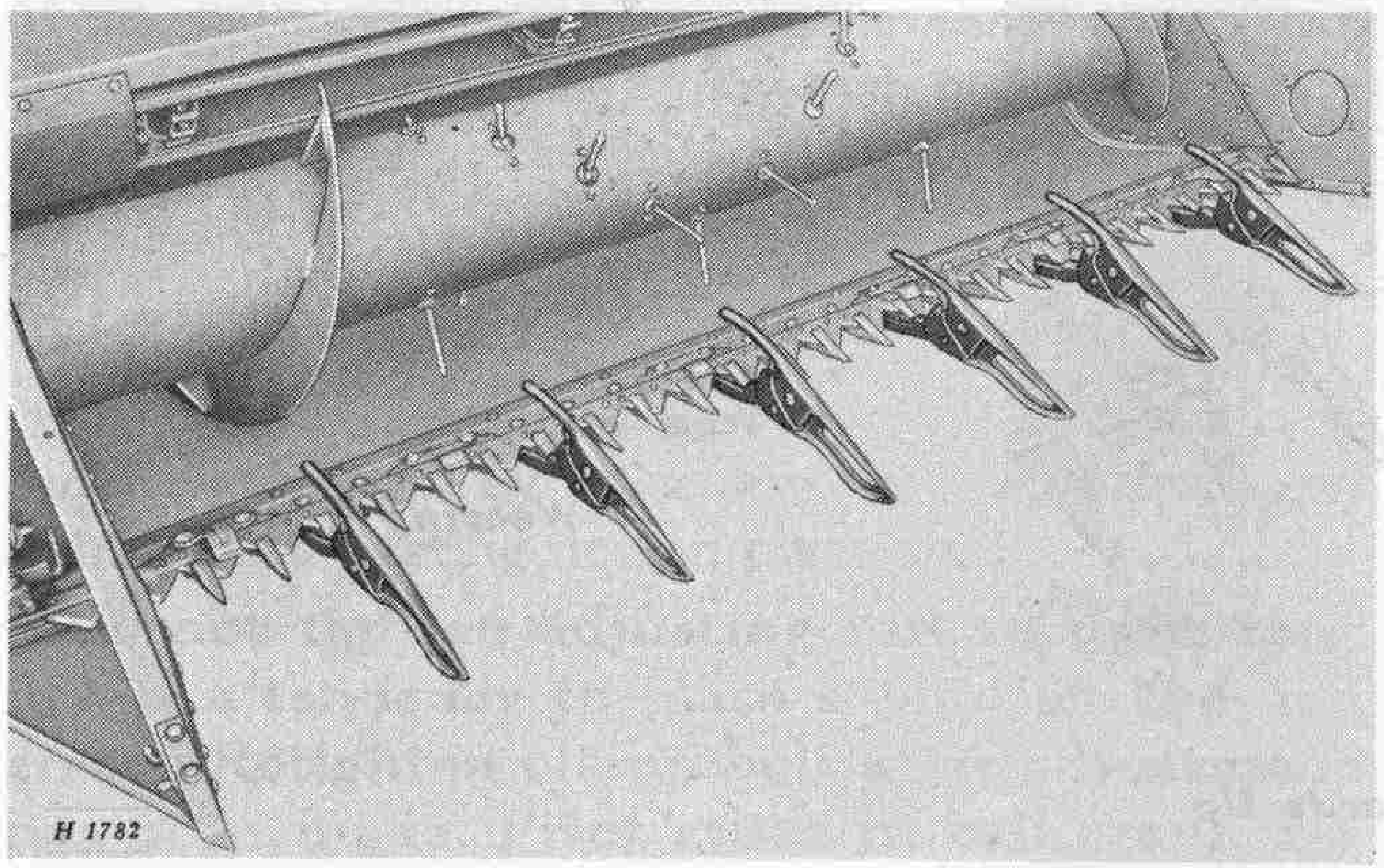
If holder is too tight, strike it between the bolts. After setting the knife holders, oil the guard plates and make sure the knife works freely.



Setting Knife Holder Down

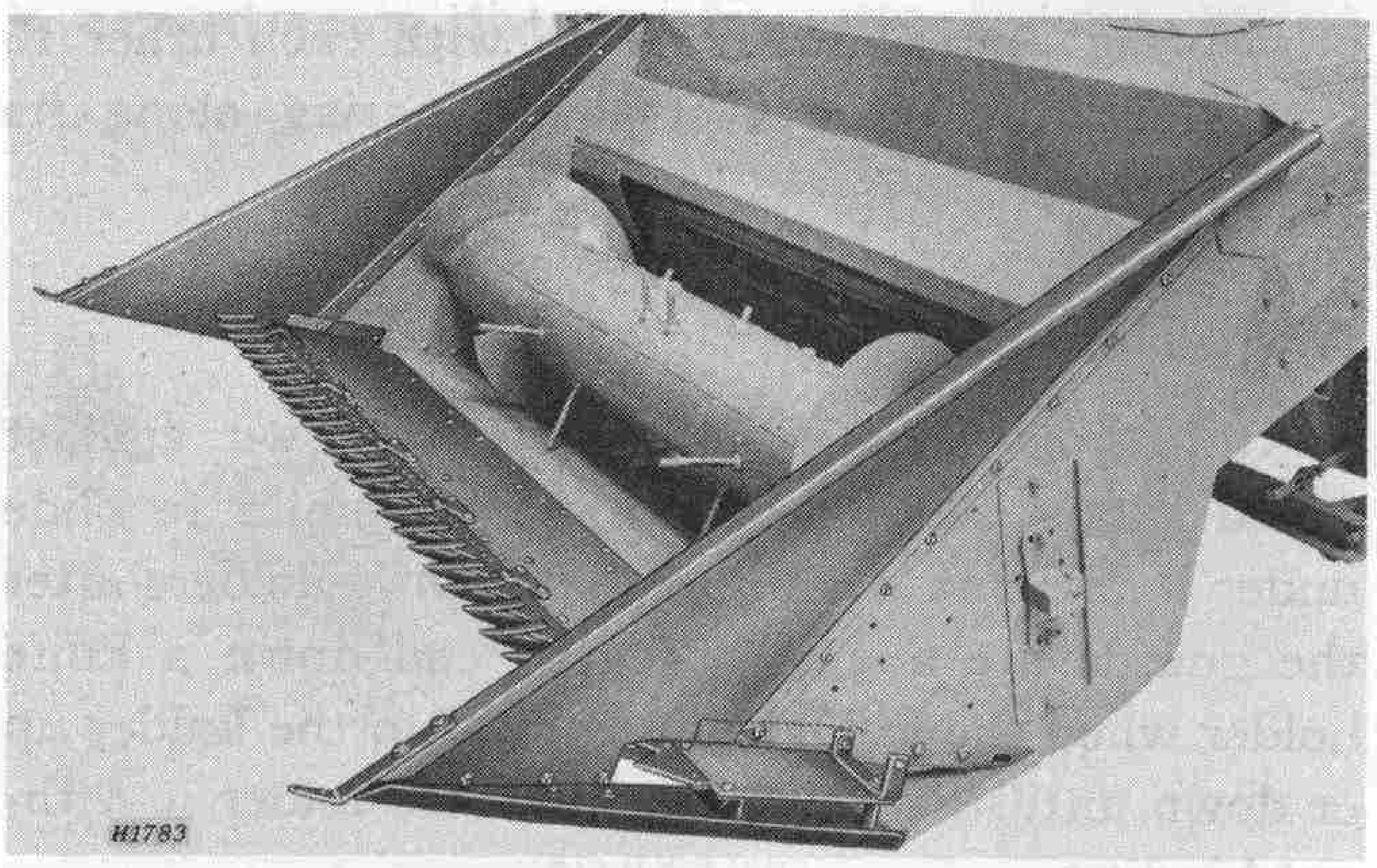
CUTTER BAR SPECIAL EQUIPMENT

LIFTING GUARDS



In a badly down or tangled crop, lifting or pick-up guards help lift the crop up onto the platform. Six AP15005H lifting guards are used.

CUTTER BAR EXTENSION



The cutter bar extension is recommended for use when combining maize. The extension allows the cutter bar to be positioned far enough ahead of the reel so the grain heads are fed evenly to the platform auger.

Order from your John Deere dealer: Shipping Package—BH10380H.

The world's best safety device is a careful operator.

PLATFORM AUGER

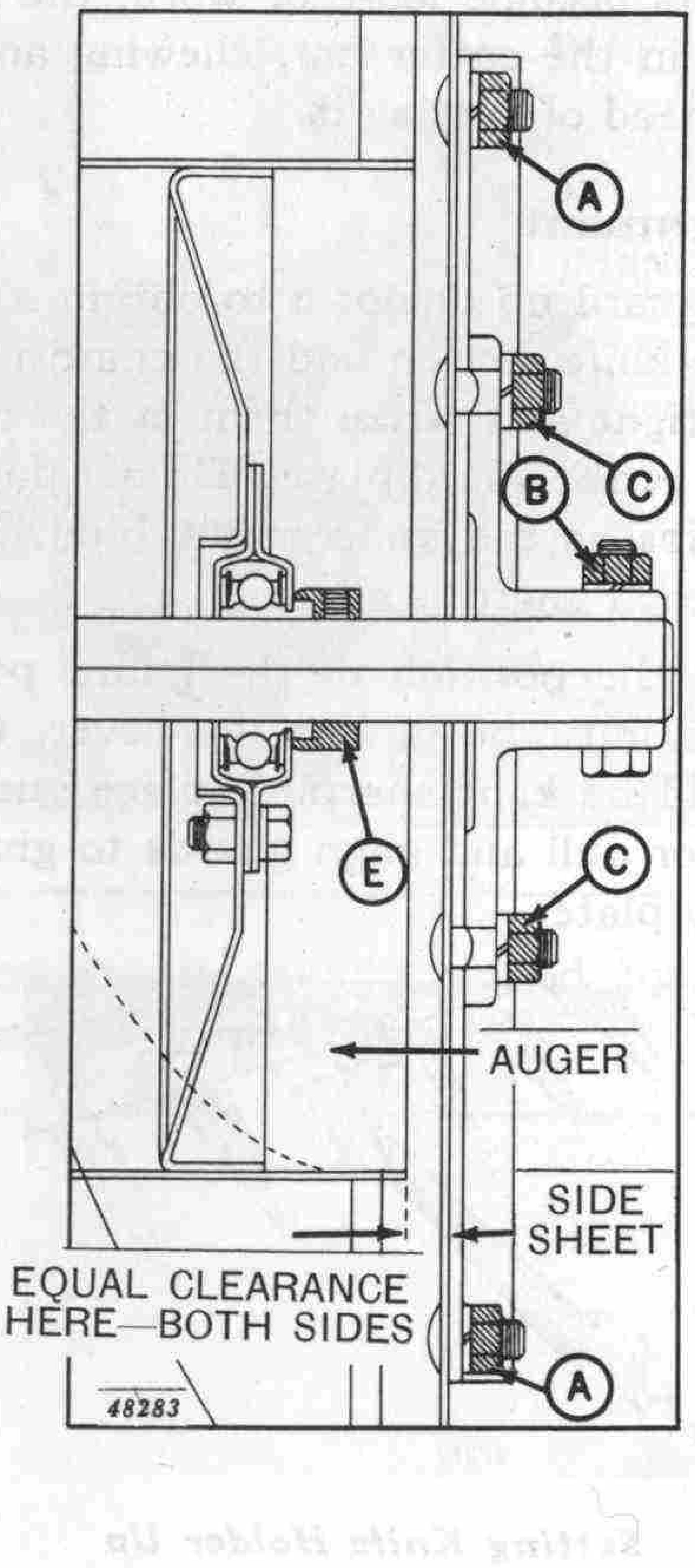
The cutting platform auger flights deliver the cut material to the center of the platform where the retracting fingers in the auger keep the material moving evenly into the feeder conveyor.

AUGER ADJUSTMENTS.

The cutting platform auger is set at the factory with a 3/8- to 1/2-inch clearance between the auger flights and the stripper and 1/2-inch clearance between auger fingers and platform bottom. These settings will be satisfactory for most crops and conditions.

Lower the auger when combining light crops.

Whenever the position of auger is changed, always check to see if there is clearance between the retracting fingers and the platform bottom and equal clearance between auger ends and platform side sheets. Adjust, if necessary, so the auger fingers will not gouge into platform bottom. Also check the auger drive chain tension—adjust if necessary.

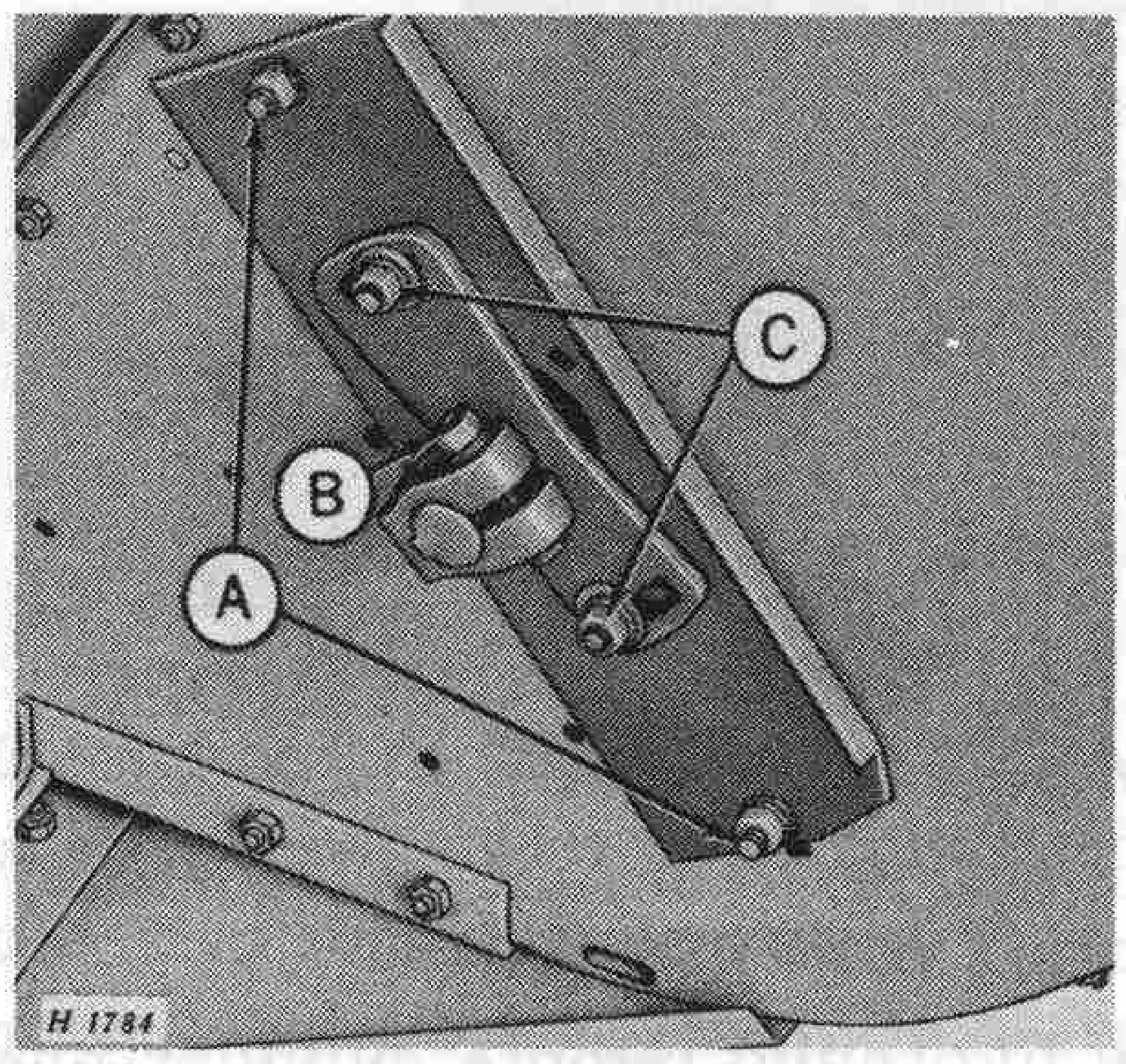


Height Adjustment.

Loosen the two bolts, "A," in adjusting brackets on left-hand platform side sheet. Raise or lower the auger to the necessary height and retighten the nuts. Follow the same procedure with the adjusting bracket on the right-hand end sheet. **CAUTION: Keep auger level, be sure there is ample clearance for the auger fingers, and check drive chain tension.**

Adjustment for Equal Clearance of Auger.

Loosen lock nut "B." Space auger so there is equal clearance between platform side sheets. Tighten lock nut. **CAUTION: Be sure the auger is in line; also check drive chain tension.**



AUGER SPEED.

The normal speed of the auger, equipped with a 20-tooth drive sprocket and a 32-tooth driven sprocket, is 136 rpm.

The speed can be increased by using different combinations of sprockets as follows:

Drive Sprocket	Driven Sprocket	Speed
22-Tooth—P48948H	38-Tooth—H10379H	126 rpm
20-Tooth—P51135H	38-Tooth—H10379H	115 rpm
22-Tooth—P48948H	32-Tooth—PK1962H	150 rpm
20-Tooth—P51135H	27-Tooth—PK2028H	161 rpm
22-Tooth—P48948H	27-Tooth—PK2028H	177 rpm

FINGER HEIGHT ADJUSTMENT.

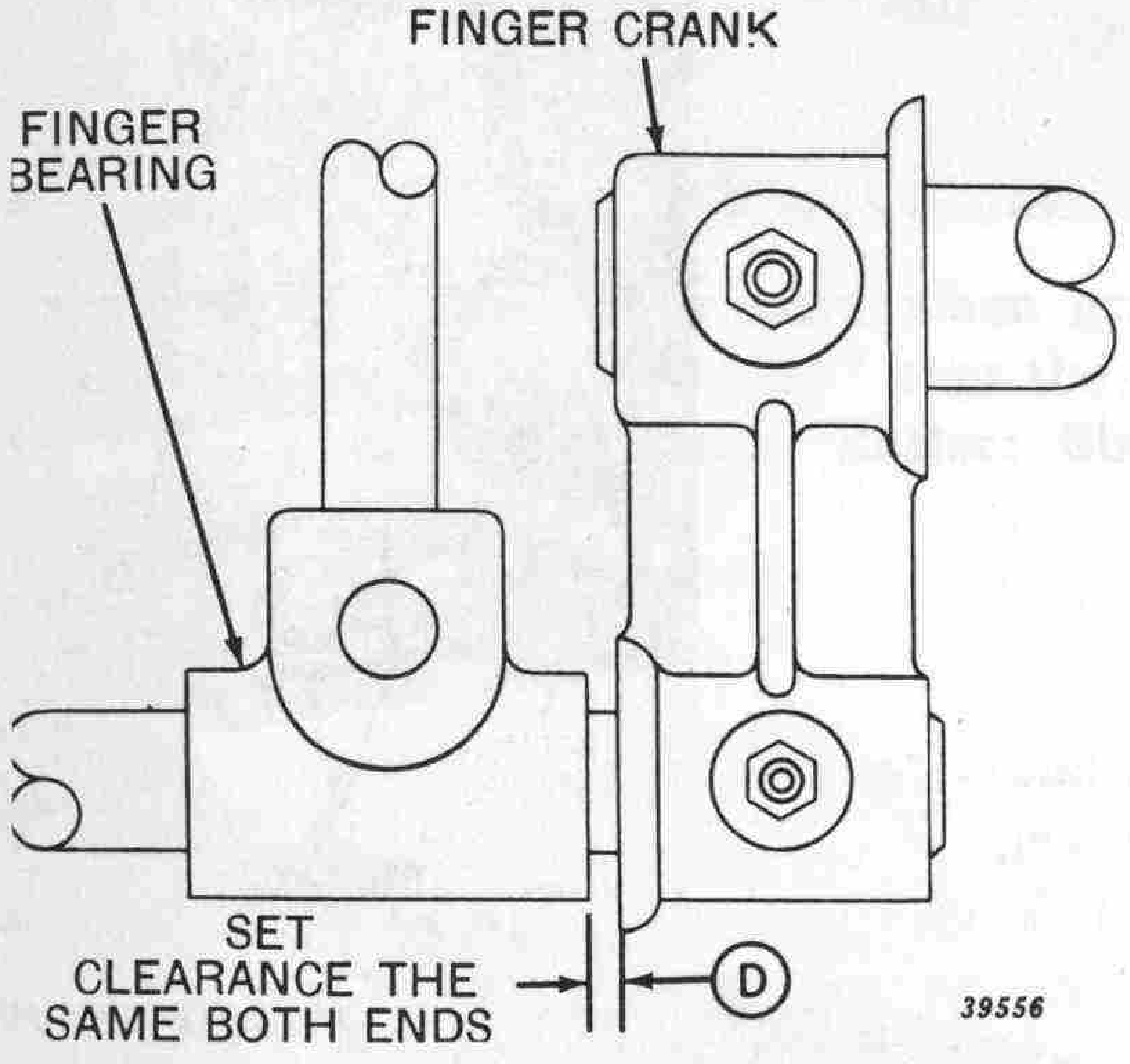
Loosen two bolts, "C," in adjusting bracket on right-hand end sheet and pivot top of bracket forward to move the extended fingers down on the auger tube. Retighten nuts. To move fingers up, reverse the procedure.

FINGER CLEARANCE.

Should it ever be necessary to replace or remove auger drive shafts or retracting fingers, be sure to obtain equal clearance between both end finger bearings and finger cranks, as shown at "D."

Obtain equal clearance by loosening locking collar "E" and lock nut "B" and moving shaft in or out as necessary. Then secure shaft in position by tightening locking collar "E" and lock nut "B."

Readjust for equal clearance of auger.



Auger Finger Clearance

PLATFORM FEEDER CONVEYOR

CONVEYOR CHAIN HEIGHT ADJUSTMENT.

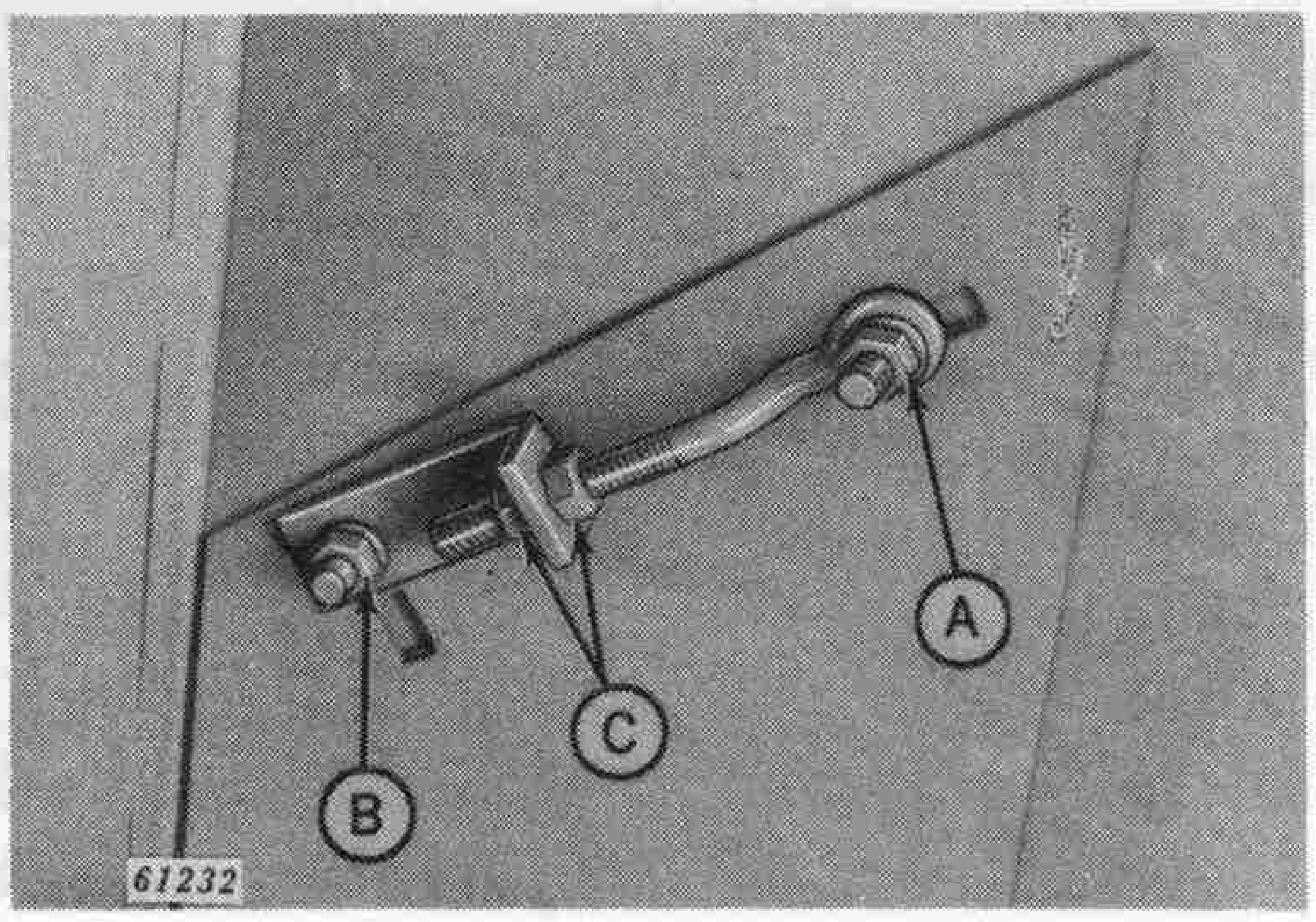
Loosen nuts "A" and "B" and adjust at "B." Tighten nuts after adjustment has been made. Adjust evenly on both sides of platform.

Raise chain when combining coarse stemmed crops or when using belt pickup for windrowed crops.

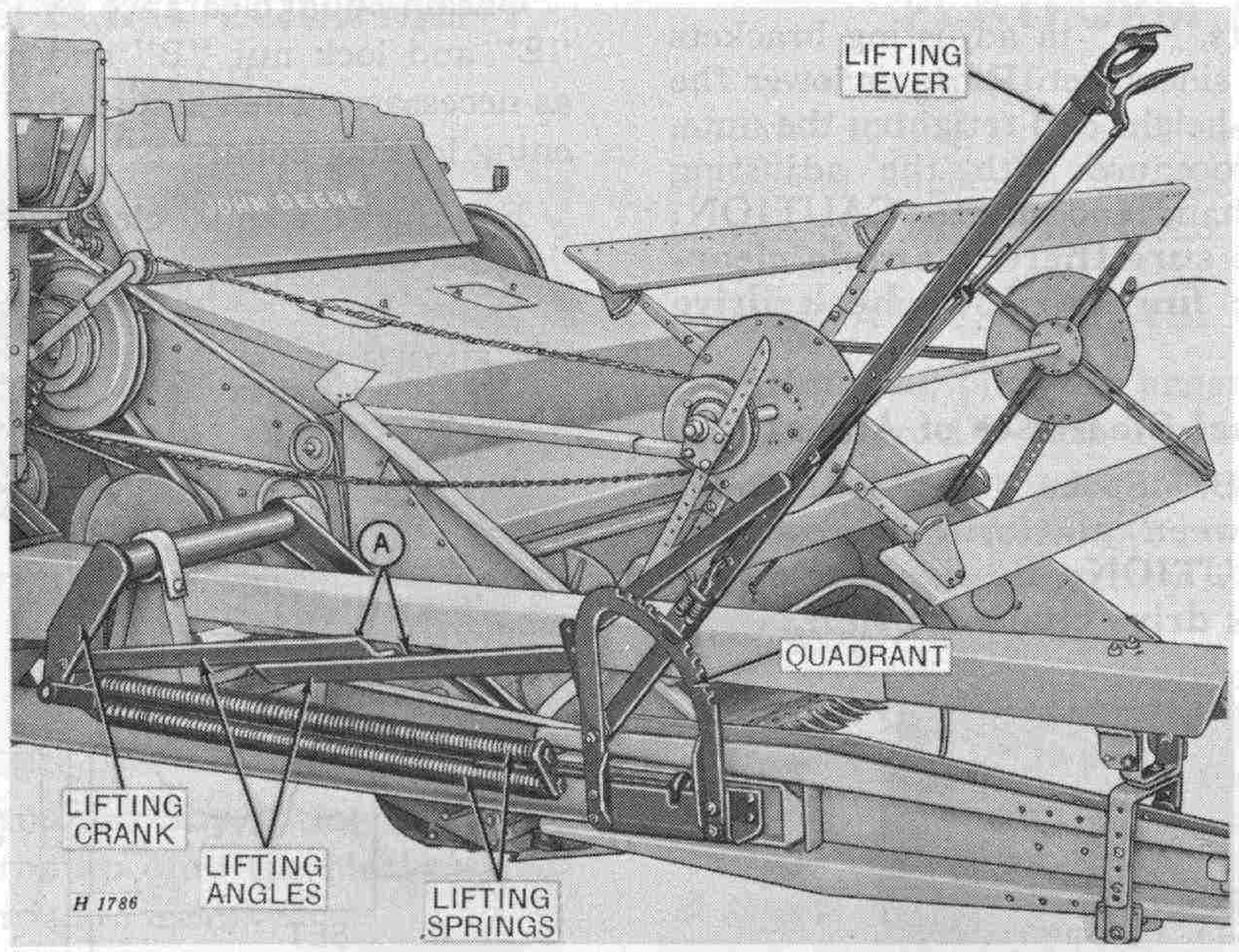
Lower chain when combining light crops.

CONVEYOR CHAIN TENSION ADJUSTMENT.

Loosen nuts "A" and "B" and adjust with nuts "C." After adjustment has been made, tighten nuts "A" and "B." When tightening nut "B," be sure height adjustment has not been disturbed. Adjust both sides of platform evenly.



PLATFORM LIFTING MECHANISM



Hand Lever Platform Lifting Mechanism

The platform has a cutting range from 1-1/2 to 30 inches high. The cutting height is regulated by means of a hand lever or hydraulic remote cylinder.

HAND LEVER ADJUSTMENTS.

The hand lever is adjustable for length, height, position, ease of operation, and cutting range. The following procedure is a systematic way of adjusting the hand lever for the most convenient operation.

With platform in lowest position required, adjust angles at "A" to set lever as high as possible on quadrant and still within easy reach from tractor seat.

Adjust the tension on the lifting spring so the platform is easy to raise.

HYDRAULIC REMOTE CYLINDER ADJUSTMENTS.

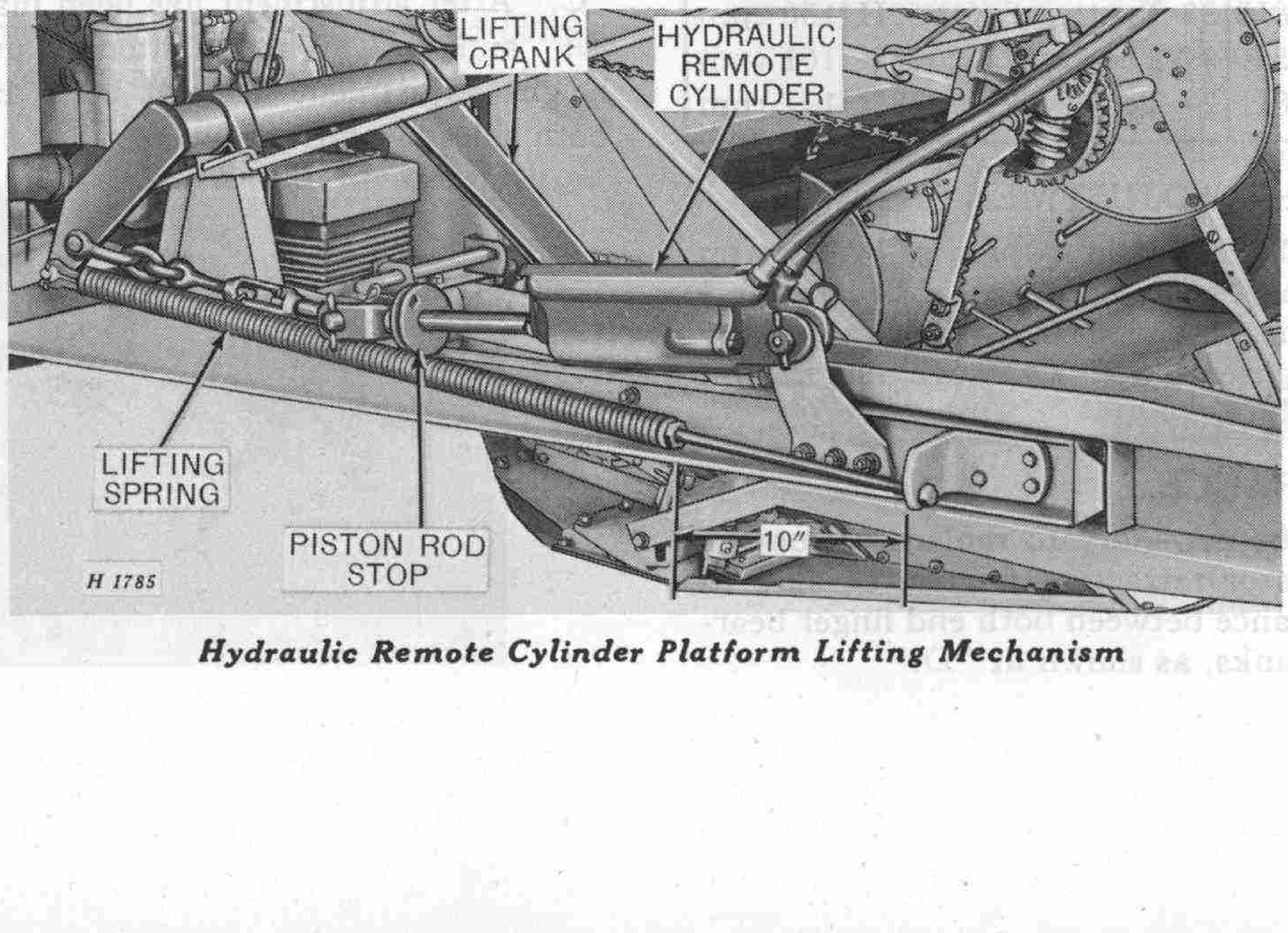
A double-acting hydraulic cylinder is necessary when operating combine.

After the hydraulic remote cylinder has been installed on the combine, the platform is raised with hydraulic remote cylinder lever on tractor in "raise" position. If platform does not raise, reverse the hoses at the valve housing on the tractor.

Replace hoses on tractor in normal location when unhooking combine.

Adjust the piston rod for maximum stroke of the piston. This will give the maximum range of cutting height.

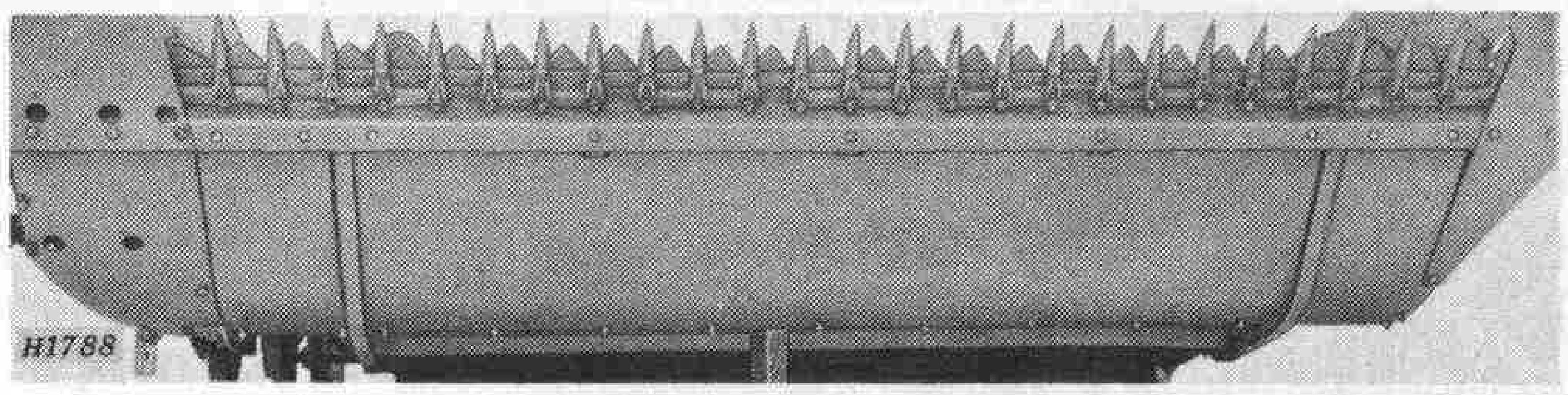
For an average setting, adjust tension on lifting spring so there is 10 inches between bracket and lifting spring.



Hydraulic Remote Cylinder Platform Lifting Mechanism

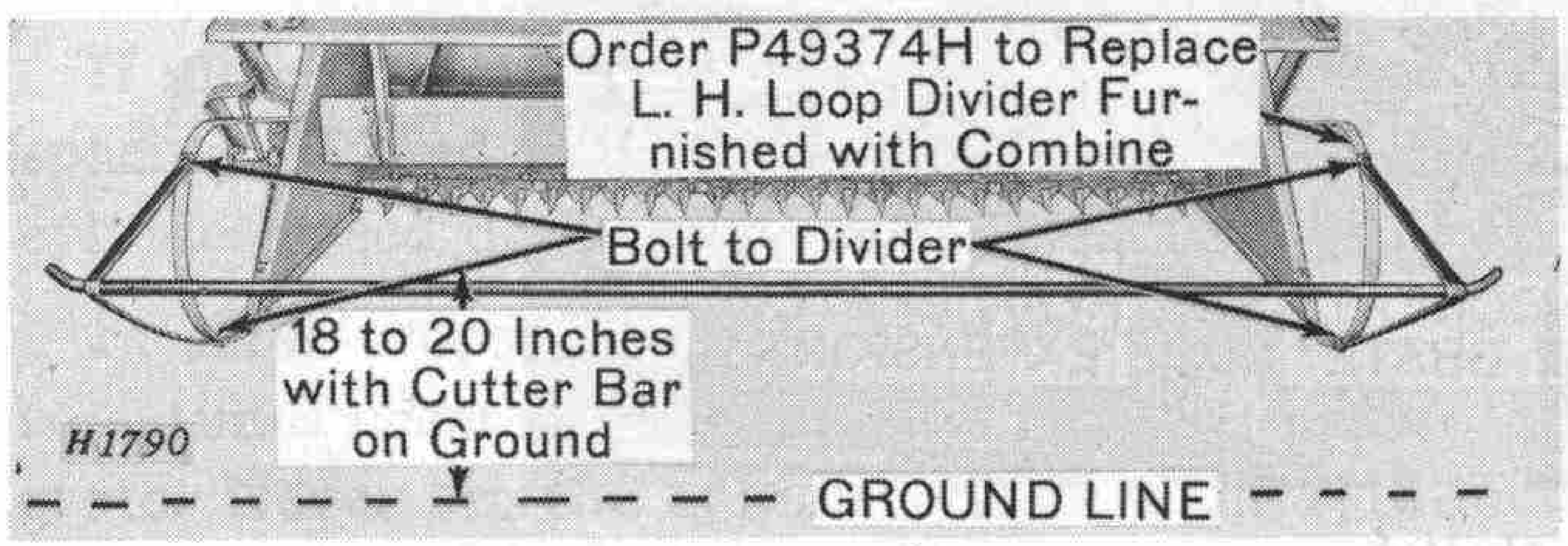
PLATFORM SPECIAL EQUIPMENT

PLATFORM BOTTOM GUARD PLATES.



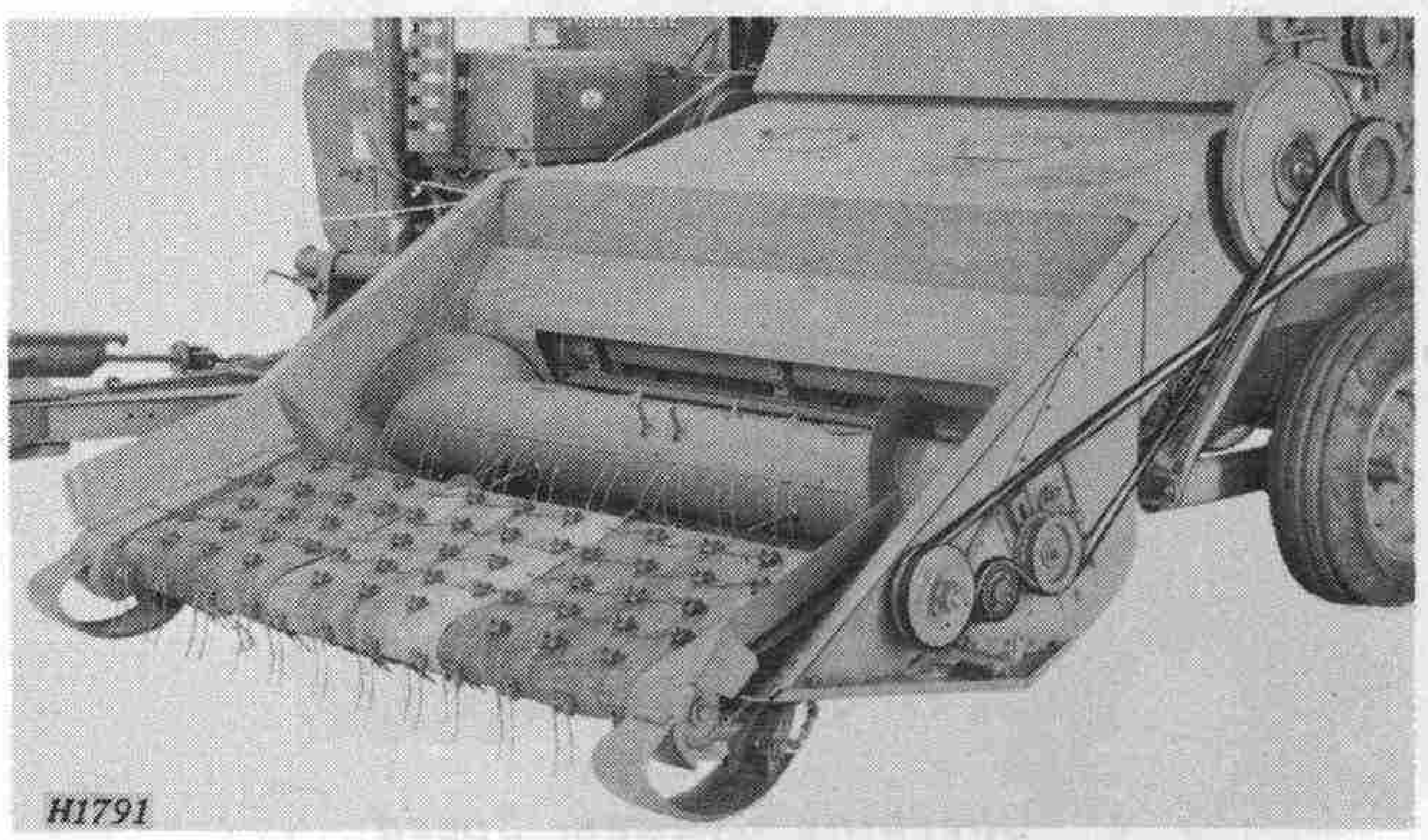
These guard plates are constructed of heavy steel which affords protection to the bottom of the platform when the combine is being operated in rough, stony country. Order from your John Deere dealer: Shipping Package—BH10236H.

WEED BAR ATTACHMENT.


Order P49374H to Replace L. H. Loop Divider Furnished with Combine
Bolt to Divider
18 to 20 Inches with Cutter Bar on Ground
H1790
GROUND LINE

This attachment should be used in crops that are infested with tall weeds. Its function is to push over the tall weeds so they can be cut off and taken onto the platform "butts" first to keep them from winding on the reel. Order from your John Deere dealer: Shipping Package—15845HH.

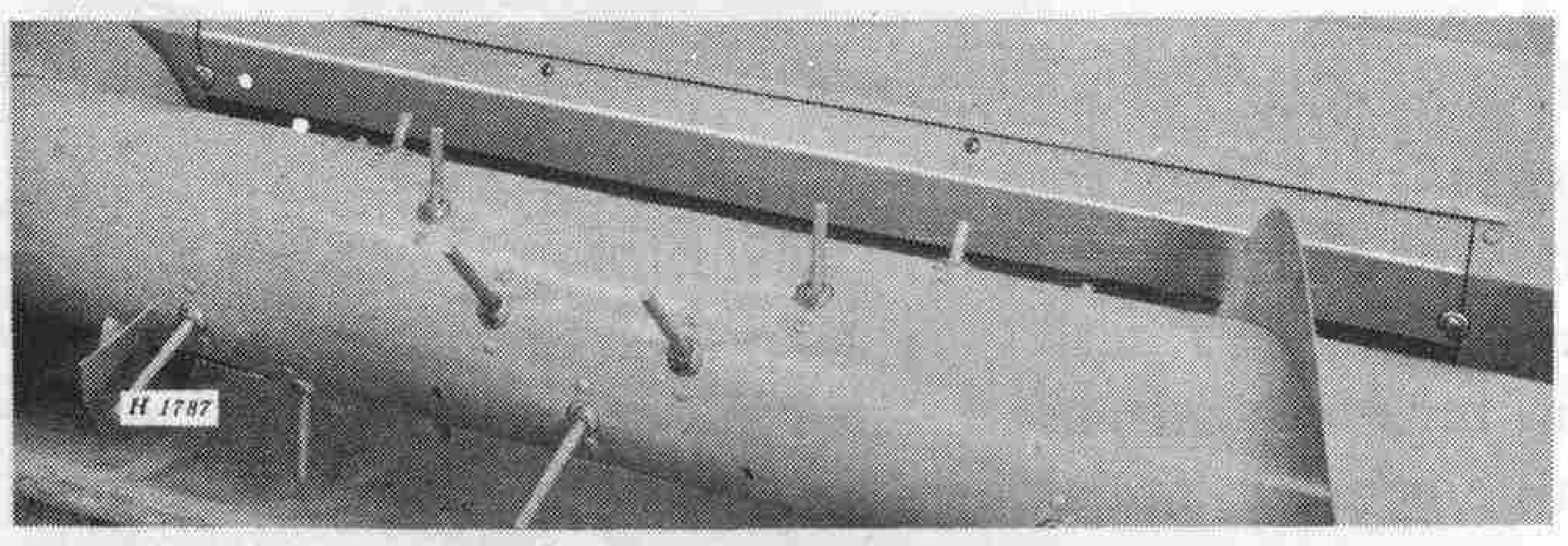
BELT PICKUP.



The belt pickup attachment is available for use where the windrow pickup method of harvesting is followed. It is quickly and easily attached to the combine. Complete instructions for its use are furnished with the pickup.

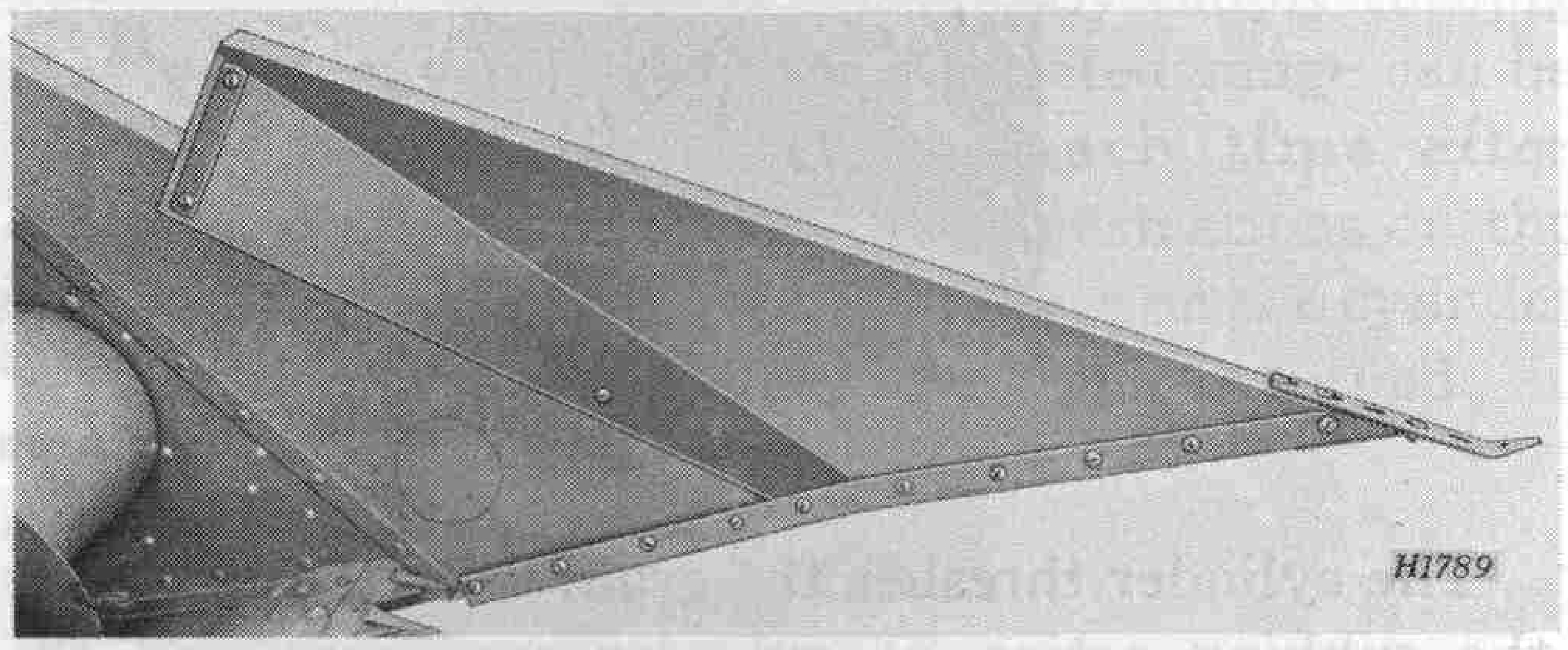
Order from your John Deere dealer: 15839HH pickup complete with 15882HH runner shoes or with 15043HH gauge wheels (2 used), 15044HH gauge wheel support arms, and 15883HH shield for gauge wheels.

PLATFORM AUGER STRIPPER SHIELD.



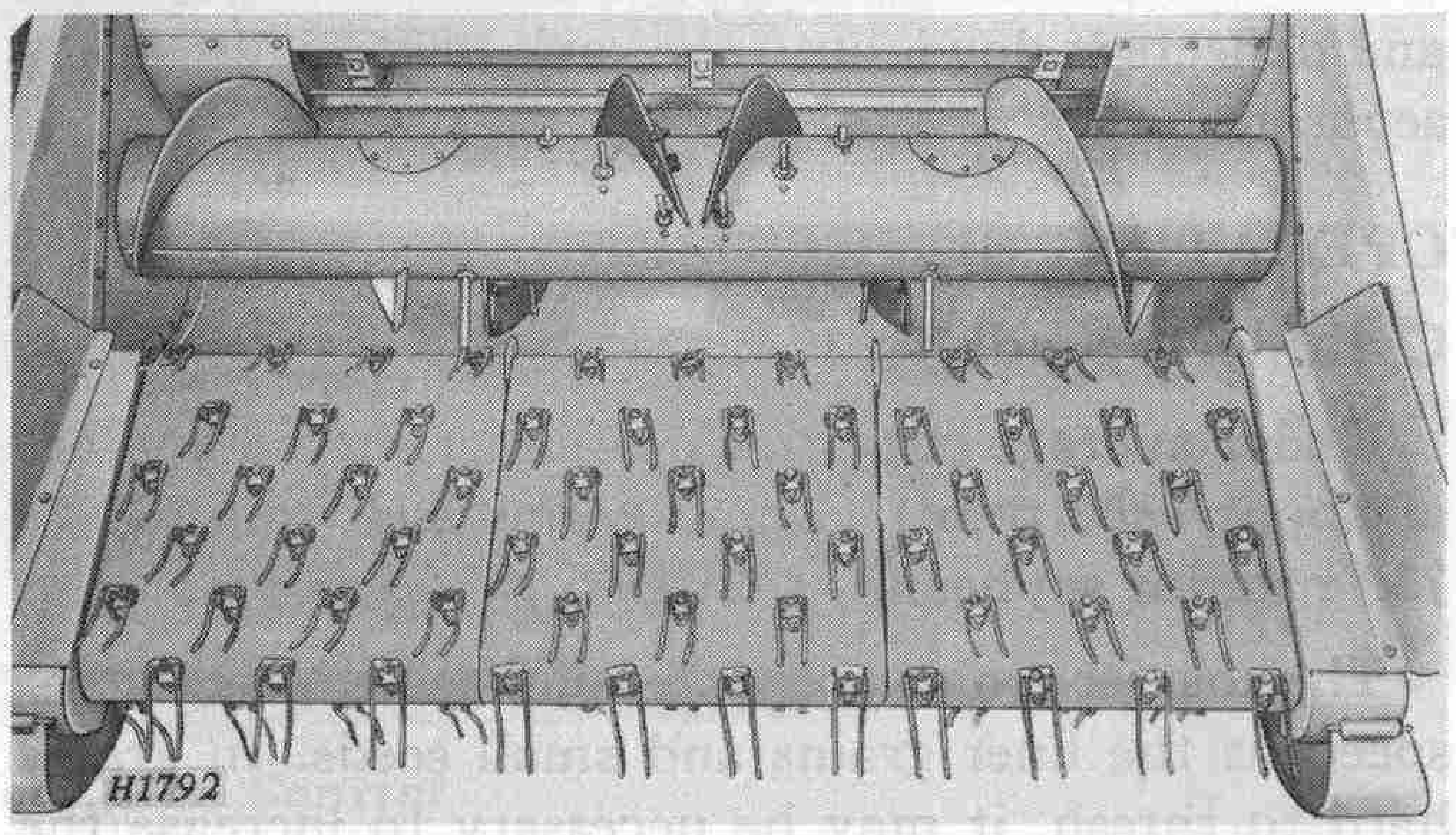
This attachment should be used when grain or beans have a tendency to "slobber" over the auger. Order from your John Deere dealer: Shipping Package—15962HH.

OUTSIDE HIGH DIVIDER.



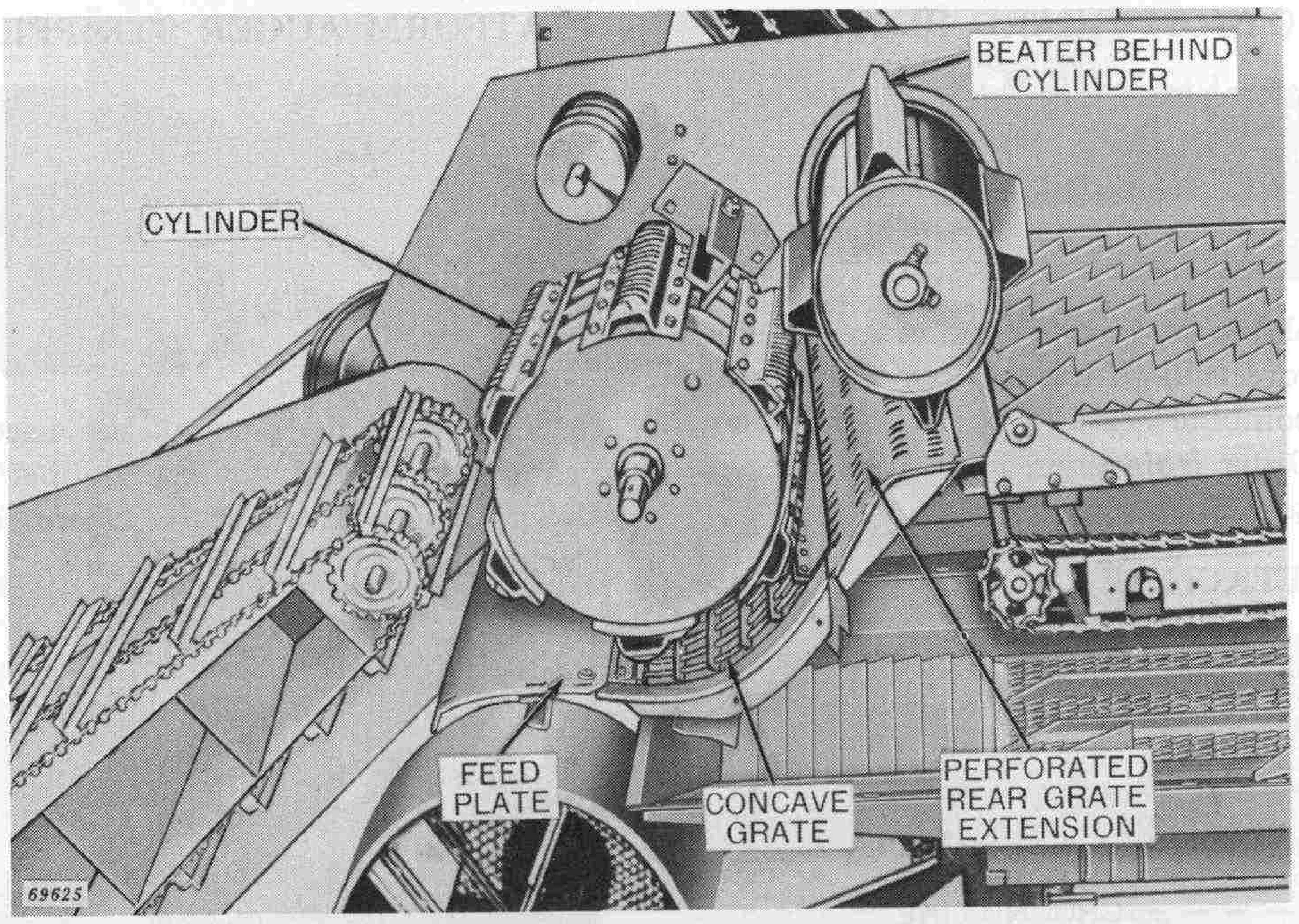
An extra high and long extension for the platform left-hand side can be furnished as an attachment. This extension divider prevents badly down and tangled grain from accumulating and eventually going into the feeder in a wad. Order from your John Deere dealer: Shipping Package—BH10212H.

WINDROW SPREADER.



The windrow spreader is used with belt pickup when harvesting windrowed crops. The spreader, which consists of reverse flight extensions for the auger, distributes the windrow evenly over the platform for uniform feeding the entire width of the cylinder. Obtain from your John Deere dealer: Shipping Package—15879HH.

CYLINDER AND CONCAVE GRATE



Threshing Units

The cylinder threshes the grain from the heads by the rubbing action of cylinder rasp-bars and the concave grate rasp- and channel-bars.

Much of the threshed grain passes through the openings in the grate and the grate extension to the step pan at front of the cleaning shoe. The straw and the remainder of the grain passes between the grate rear extension and beater behind cylinder onto the straw rack.

The beater slows down the straw, then spreads and deflects it down onto the rack, materially aiding separation.

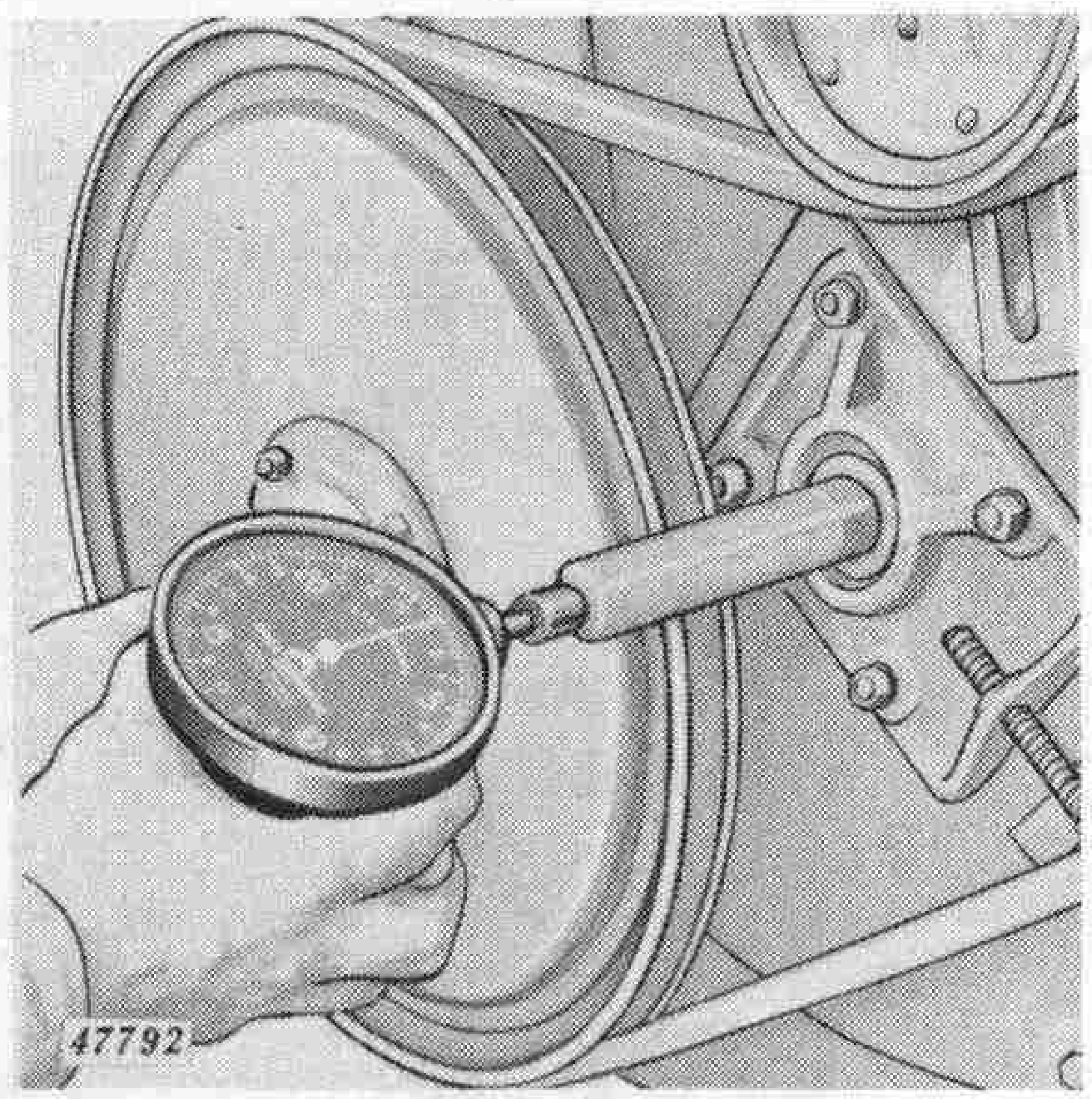
OPERATING SUGGESTIONS.

Cylinder Speeds.

Under average conditions, cylinder should operate at about 1300 rpm for small grains and from 600 to 750 rpm for soybeans.

The coarser grains do not require as high a cylinder speed as the finer grains and small seeds. In grains hard to thresh, it may be necessary to increase the speed of cylinder slightly.

Damp grain requires a higher speed than grain that is dry. If cylinder speed is too high, grain may be cracked and straw broken up too much, overloading the cleaning shoe. Use as much speed as possible, up to a reasonable point, to do good threshing. If increased speed causes cracking, reduce speed to where cracking is eliminated, then move cylinder toward concave to get sufficient rubbing action to remove grain from heads.



Checking Cylinder Speed

If material is wrapping on the cylinder, increase the cylinder speed slightly and move as close as possible to grate. If this does not eliminate wrapping, the cylinder stripper may be out of adjustment (see page 34).

IMPORTANT: Do not adjust tractor governor to vary speed of cylinder. This varies the

speed of the entire combine—the result is inefficient operation.

Remember, good threshing depends largely upon having the correct cylinder speed. Test speed with indicator—never guess.

Cylinder and Concave Spacing.

The spacing between the cylinder rasp-bars and grate-bars is indicated by the position of the pointers on the cylinder shaft bearing brackets. The spacing is set at 1/4-inch at the factory, which is satisfactory for threshing most small grains. Final adjustment must be made in the field to meet the actual conditions.

If all seed is not being threshed out, decrease the spacing. If seed is being cracked, and reducing the cylinder speed does not help, increase the spacing.

In some crops, particularly clover and flax, it is sometimes necessary to adjust cylinder closer to the grate. Never set the cylinder closer than 1/16-inch from the grate. If threshing is not satisfactory at this setting, increase the cylinder speed.

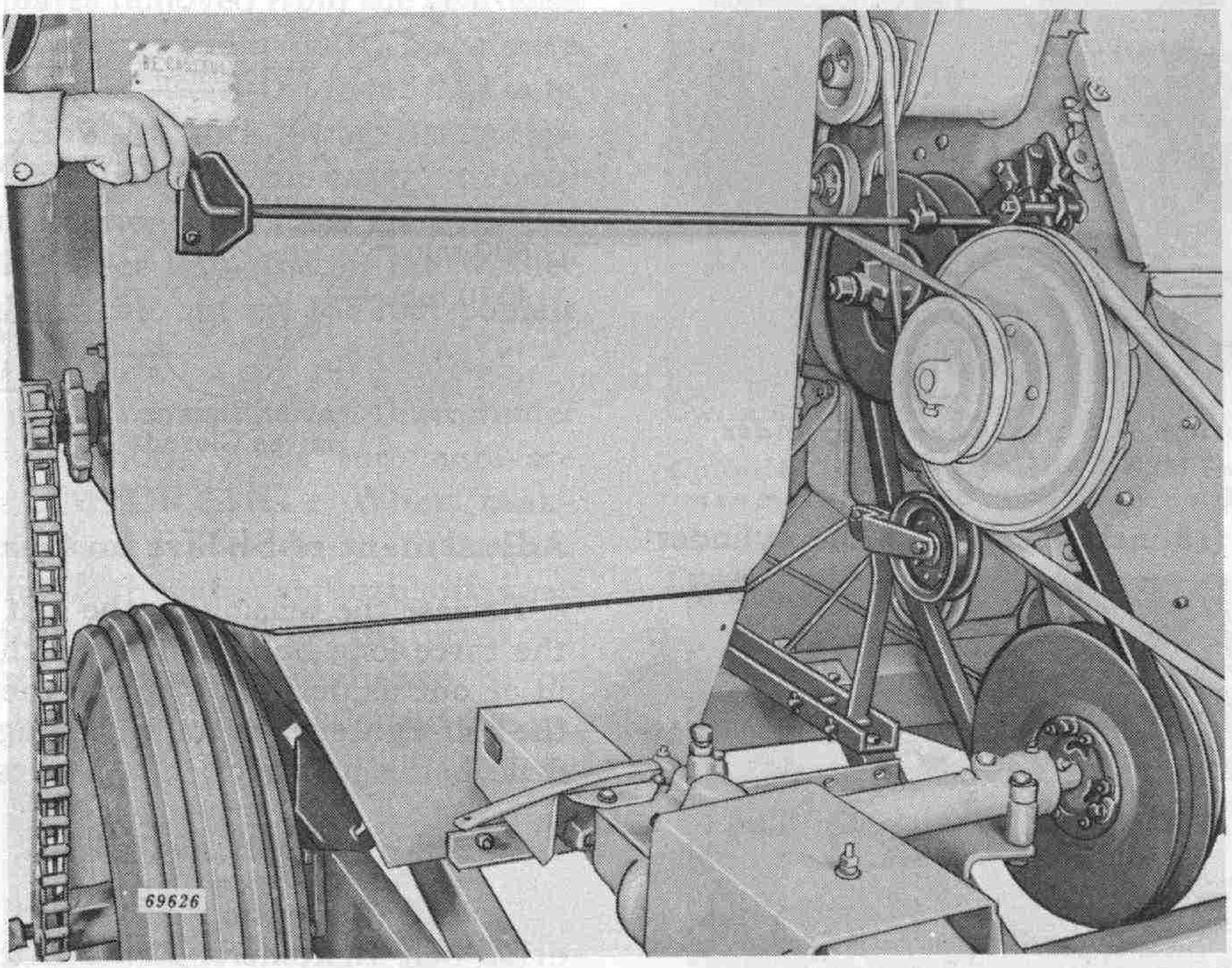
Concave Grate Covers.

In some crops that are extremely hard to thresh, threshing can be improved by using snap-on covers over the openings between the first two or three grate-bars (page 35). This will keep the material on the threshing surface for a longer time. This should only be done when absolutely necessary as the straw may be broken up and tailings may become excessive.

ADJUSTMENTS.

Quick-Change Cylinder Speed Control.

The cylinder speed is quickly and easily changed to meet changing crop conditions. By simply turning the crank, any speed within a selected range can be obtained. **Readjust tightener each time after changing cylinder speed.** The illustrations on the next page show how the sheave halves on the cylinder shaft move in and out when the crank is turned.



Quick-Change Cylinder Speed Control

A good operator is a safe operator.

BE CAREFUL
Take Your Time—Not Your Life.

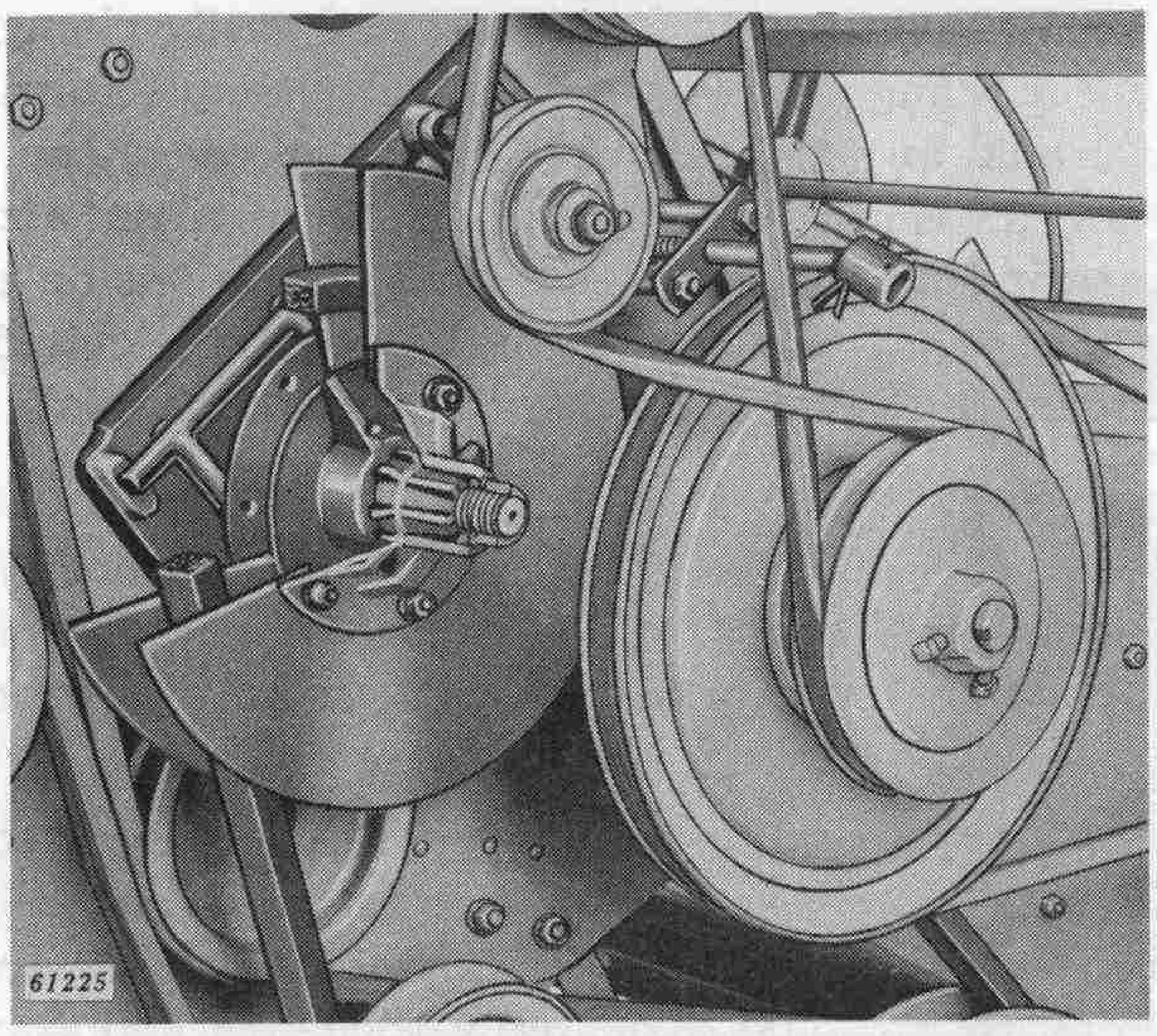
CYLINDER AND CONCAVE GRATE—Continued

The lower sheave on the gear case or engine is also adjustable. In addition, the sheave plates on the upper and lower sheaves are interchangeable so the large sheave can be used on either shaft.

When sheave plates are interchanged in conjunction with the plate spacing adjustment, a range of cylinder speeds from 430 to 1675 rpm is available.

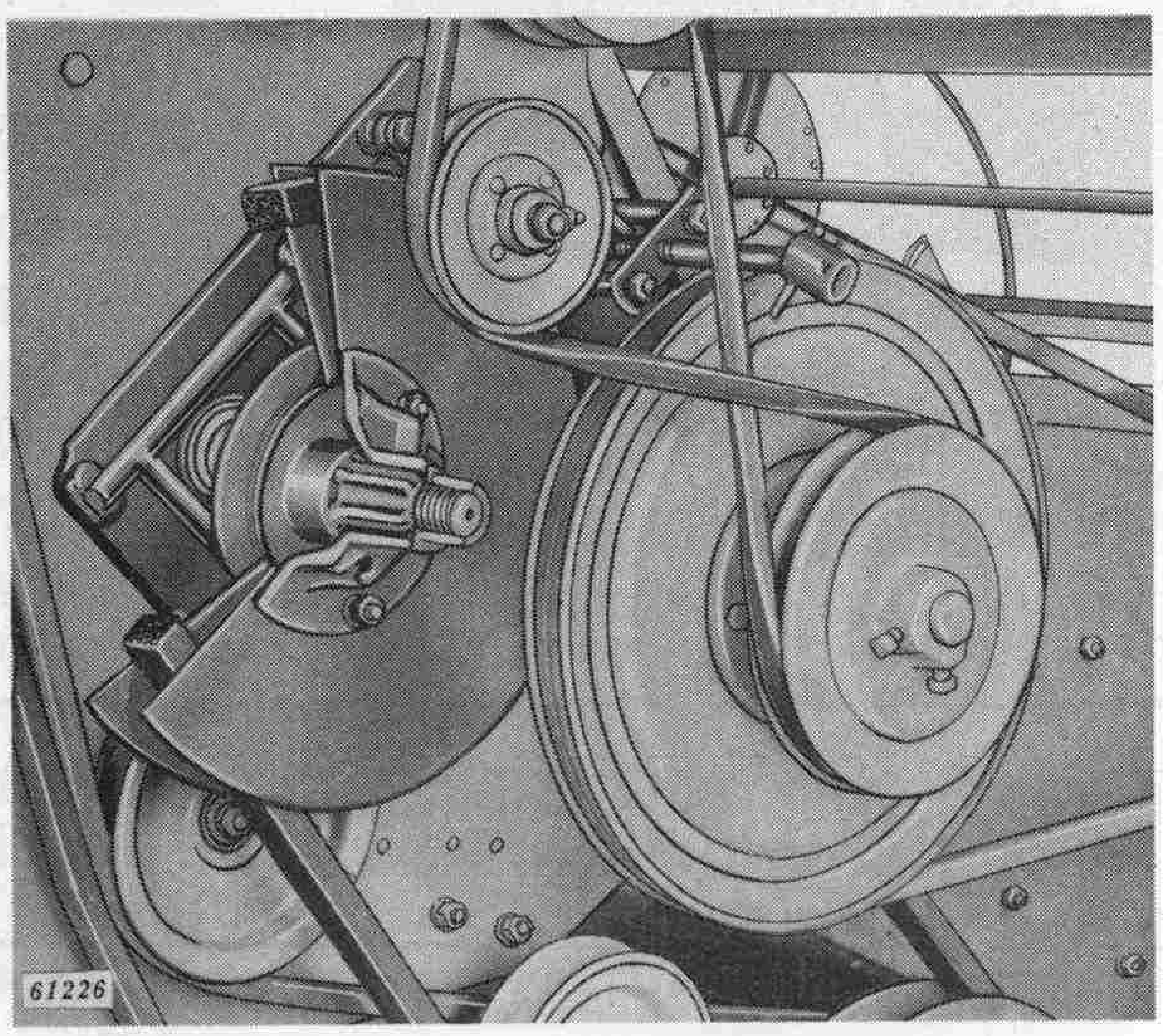
When the small (12-3/4-inch) sheave is on the cylinder shaft (which is the way the combine is shipped) a range of speeds from 715 to 1685 rpm is available.

Each revolution of the crank will change the cylinder speed approximately 25 rpm.


61225

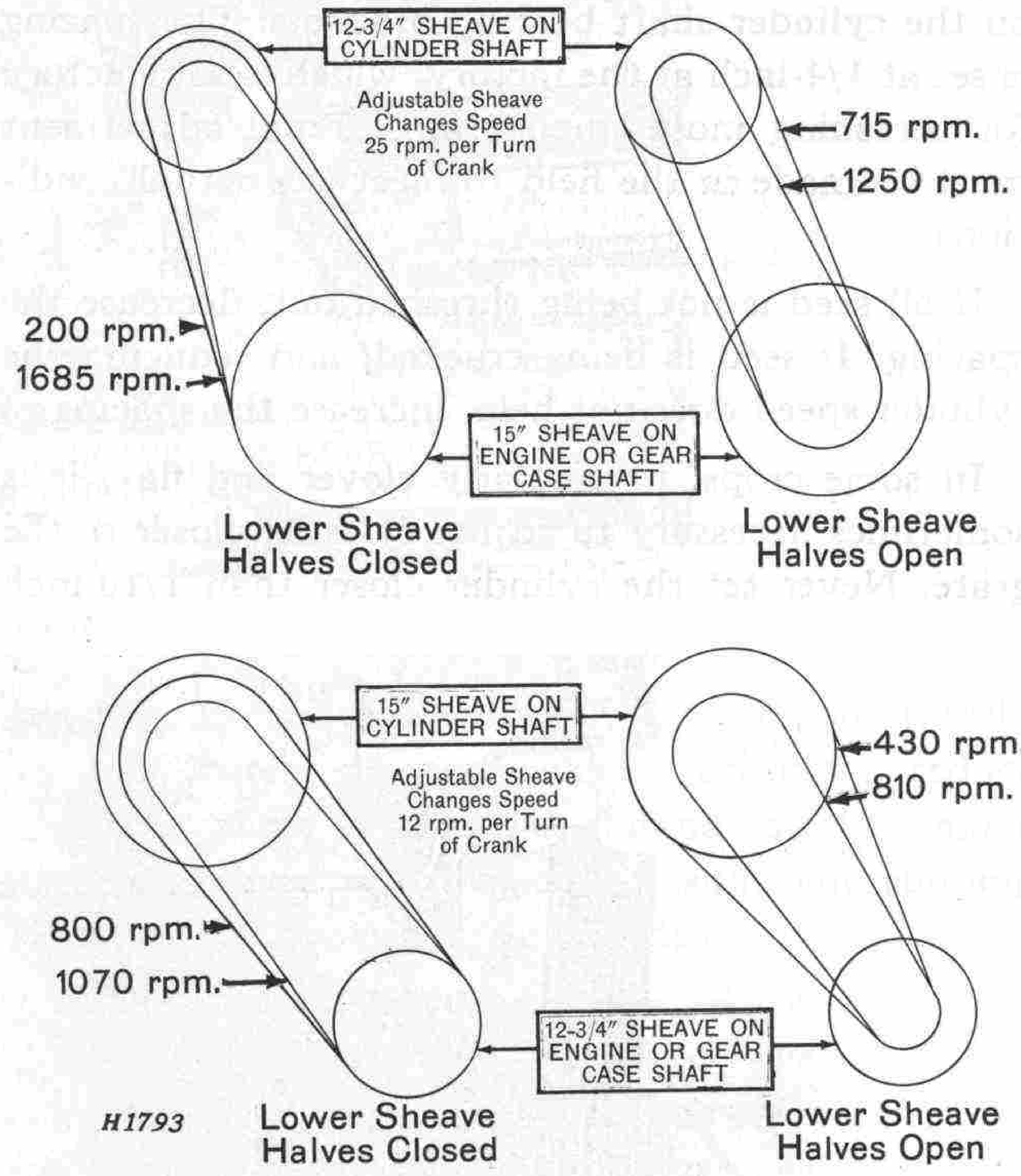
Fast Speed Position of Quick-Change Cylinder Speed Control

With the large (15-inch) sheave on the cylinder shaft, the speed range is from 430 to 1070 rpm. With this arrangement, every revolution of the crank will change the cylinder speed approximately 12 rpm.


61226

Slow Speed Position of Quick-Change Cylinder Speed Control

The illustration below shows the location and spacing of the sheaves for the different speed ranges. With the large sheave on the gear case shaft and the sheave halves 2 inches apart, the range of speeds available will handle most small grains.


12-3/4" SHEAVE ON CYLINDER SHAFT
Adjustable Sheave Changes Speed 25 rpm. per Turn of Crank
715 rpm.
1250 rpm.
200 rpm.
1685 rpm.
15" SHEAVE ON ENGINE OR GEAR CASE SHAFT
Lower Sheave Halves Closed
Lower Sheave Halves Open
15" SHEAVE ON CYLINDER SHAFT
Adjustable Sheave Changes Speed 12 rpm. per Turn of Crank
430 rpm.
810 rpm.
800 rpm.
1070 rpm.
12-3/4" SHEAVE ON ENGINE OR GEAR CASE SHAFT
Lower Sheave Halves Closed
Lower Sheave Halves Open
H1793

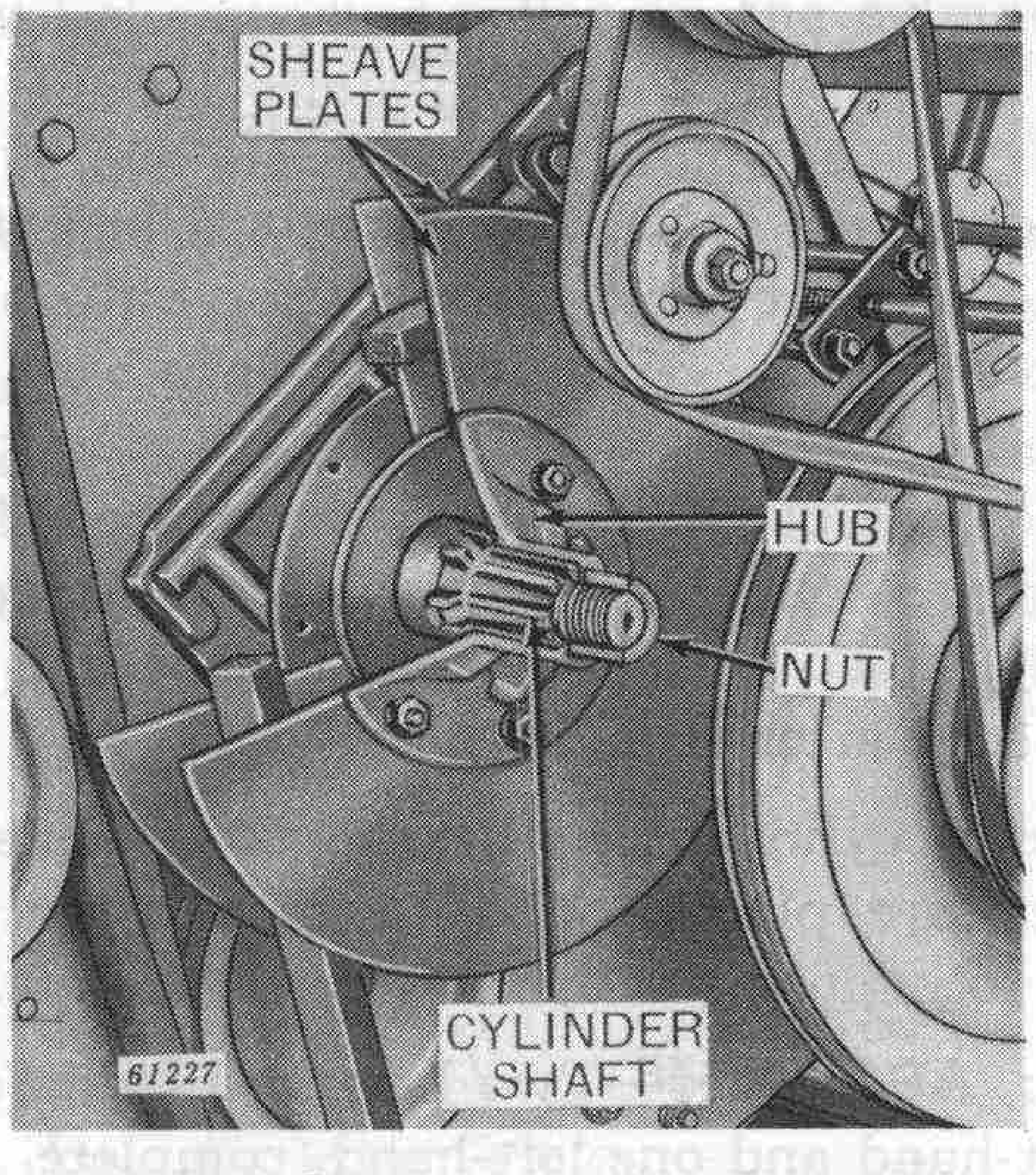
Adjustment of Sheave on Gear Case.

Release the tension on the belt tightener. Remove the three long bolts and screw the inner sheave half in or out as desired. Replace the long bolts. Adjust the belt tightener as shown on page 33 so the cylinder drive belt is just tight enough to run without slipping.

Interchanging Sheave Plates.

Release the tension on the cylinder and separator drive belt tighteners. Remove the three long bolts and the separator drive sheave and fan drive sheave assembly. Screw the adjustable sheave hub completely off the rigid hub and remove the drive belt. Remove the sheave plates from the hubs.

Loosen the hexagon nut on the cylinder shaft. Place a pry bar behind sheave and strike hub lightly. If this does not loosen the hub, slotted holes are provided in the hub so a gear puller or long bolts can be used to remove the hub. If bolts are used, put

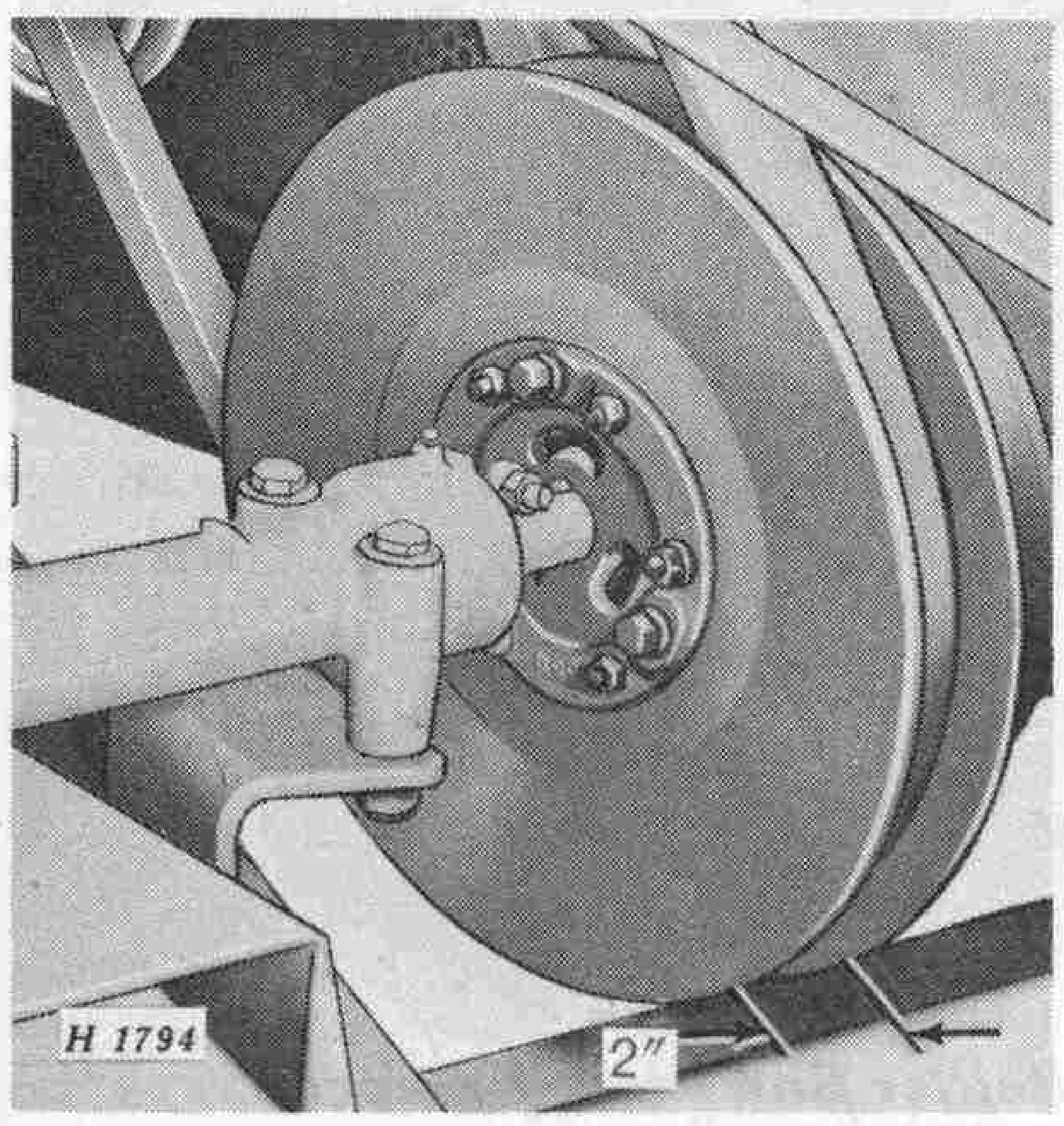


Cylinder Shaft Sheave

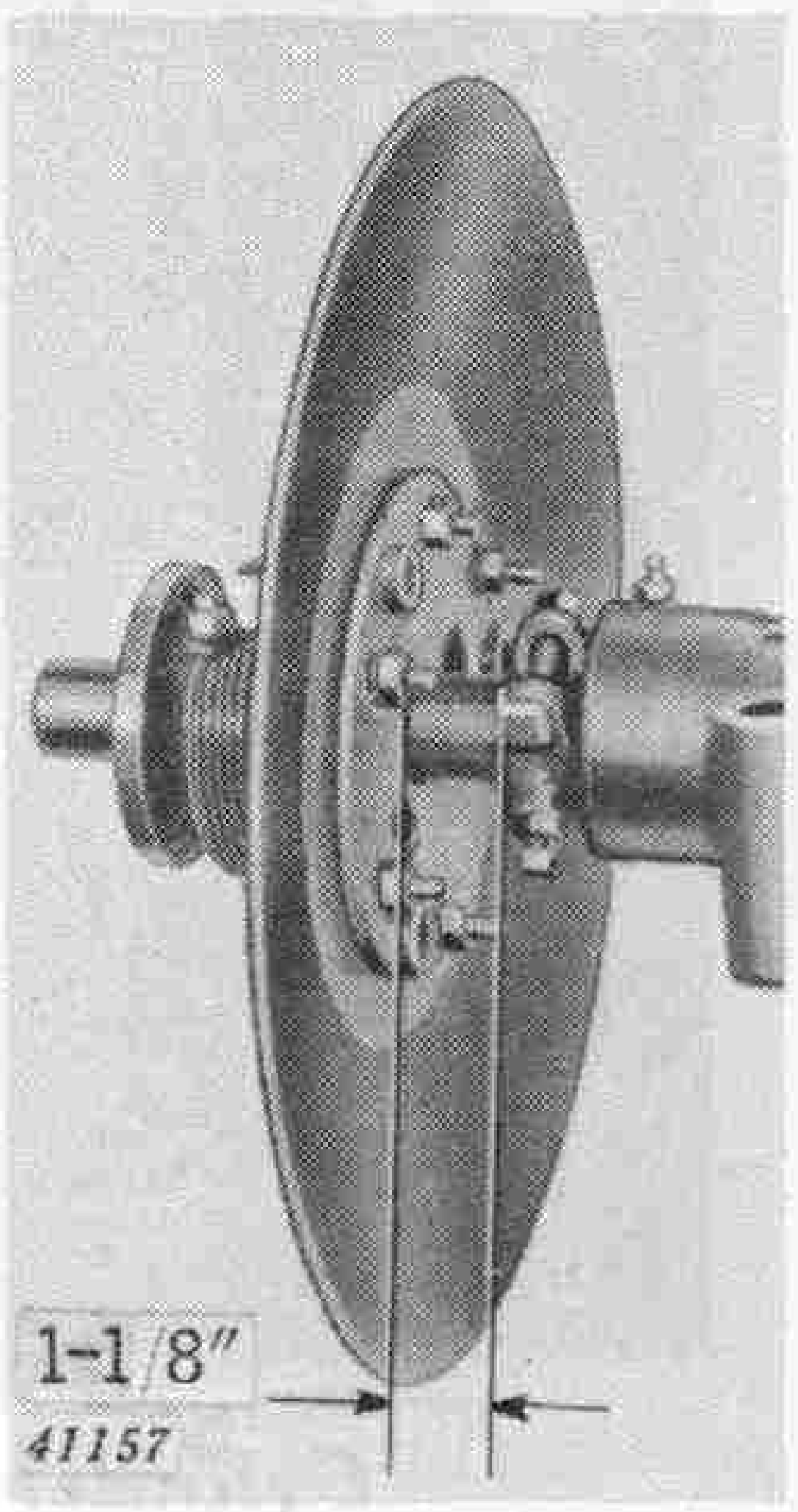
the bolt heads in the slots and thread the bolts through holes in a plate placed against the end of the cylinder shaft. Nuts can then be screwed onto the bolts against the plate to pull the hub loose.

Bolt the sheave plates removed from the gear case hubs to the hubs for the cylinder shaft, being sure nuts are tightened securely. Slide the inner hub onto the cylinder shaft being sure fork prongs seat properly on the back of the hub. Slide the outer hub onto the shaft so the lubrication hole lines up with the grease fitting on the inner hub. Install the washer and stop nut. Tighten the nut to 150-foot-pounds torque.

Bolt the sheave plates removed from the cylinder hubs to the gear case hubs, being sure nuts are tightened securely. **IMPORTANT: When making this change on a PTO-driven machine, note the position of the sheave hub on gear case shaft. The hub must be 1-1/8 inches from bearing retaining collar for the sheave to be aligned with the cylinder sheave.** Loosen the set screws to move the hub. After hub is moved, tighten the set screw and secure it with lock wire. Position the cylinder drive belt and screw the adjustable hub onto the rigid hub until there is a distance of 2 inches between outside edges of large sheave halves.



Gear Case Sheave

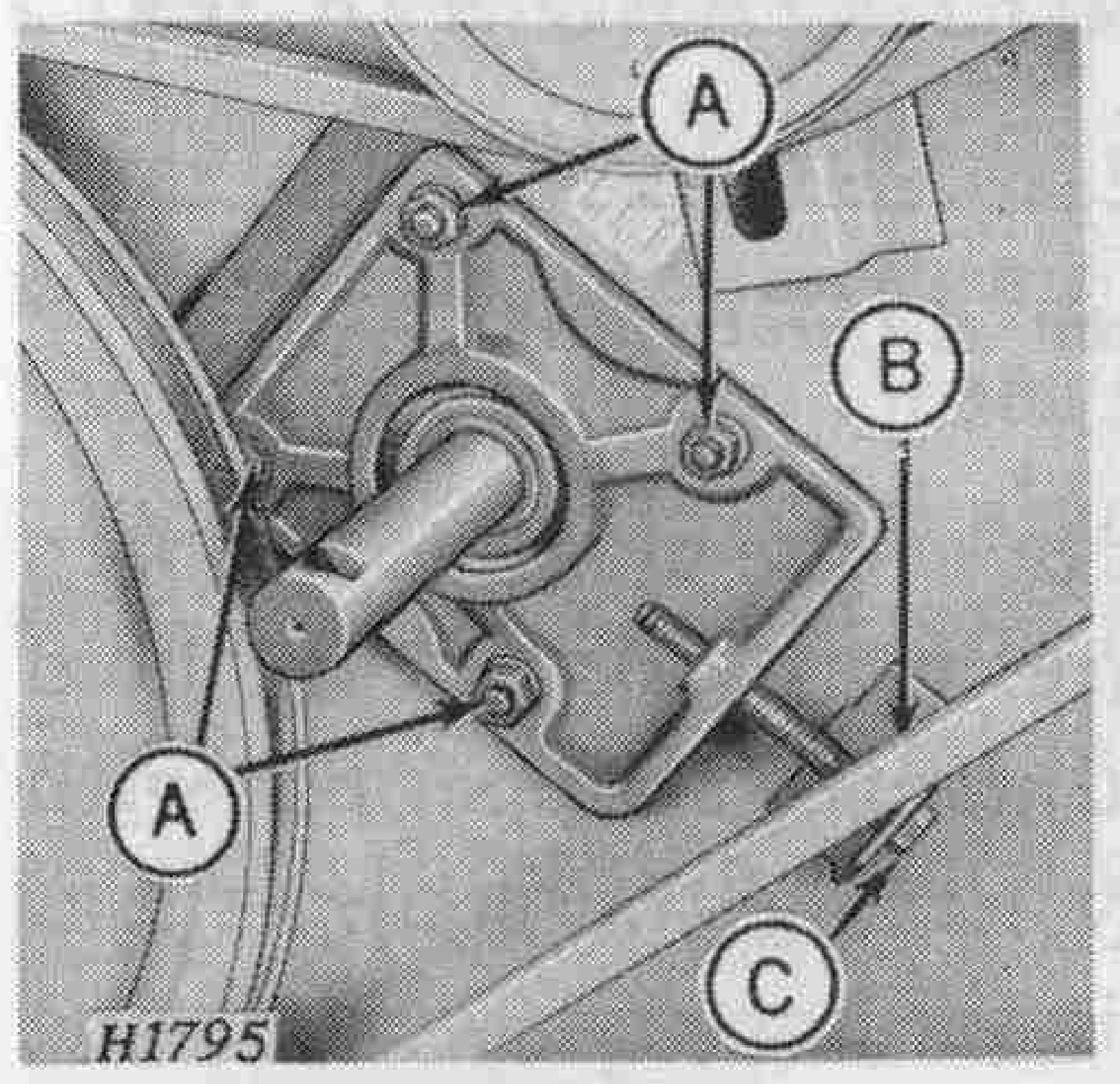


Sheave Hub

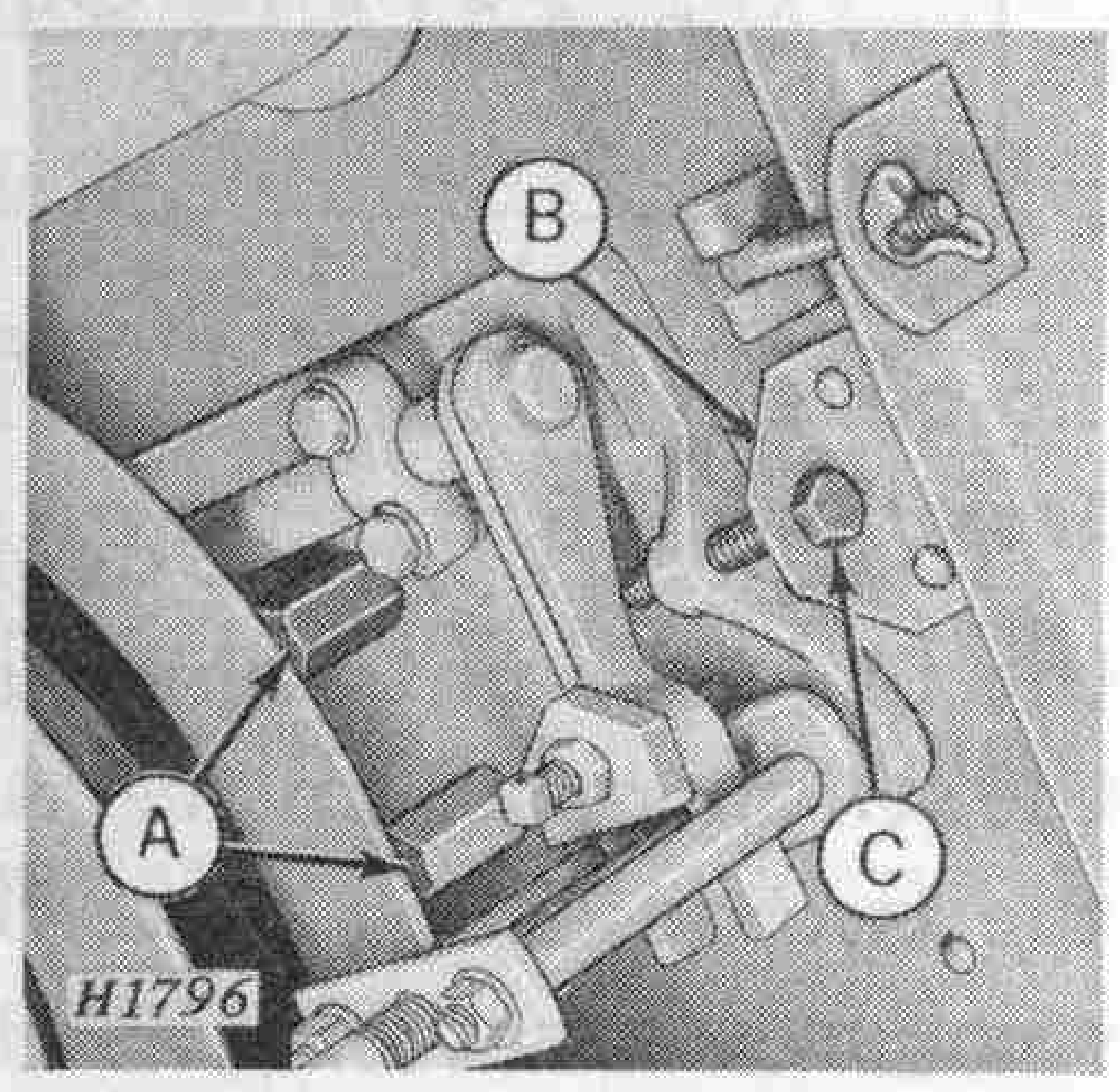
Cylinder and Concave Grate Spacing Adjustment.

Loosen the bolts "A" on both sides of the combine. Loosen the lock nut "B" and screw the bolt "C" into the bearing support casting on right-hand side and out on left-hand side to raise the cylinder or out of the casting on right-hand side and into the casting on left-hand side to lower the cylinder. Then tighten the bolts and the lock nut. Be sure to adjust both ends of the cylinder evenly.

When setting the cylinder 1/16-inch from the grate, use a 1/16-inch shim between the cylinder and concave to insure uniform spacing at both ends and to guard against too close a setting. **CAUTION: Be sure all cylinder bars are 1/16-inch from concave.**



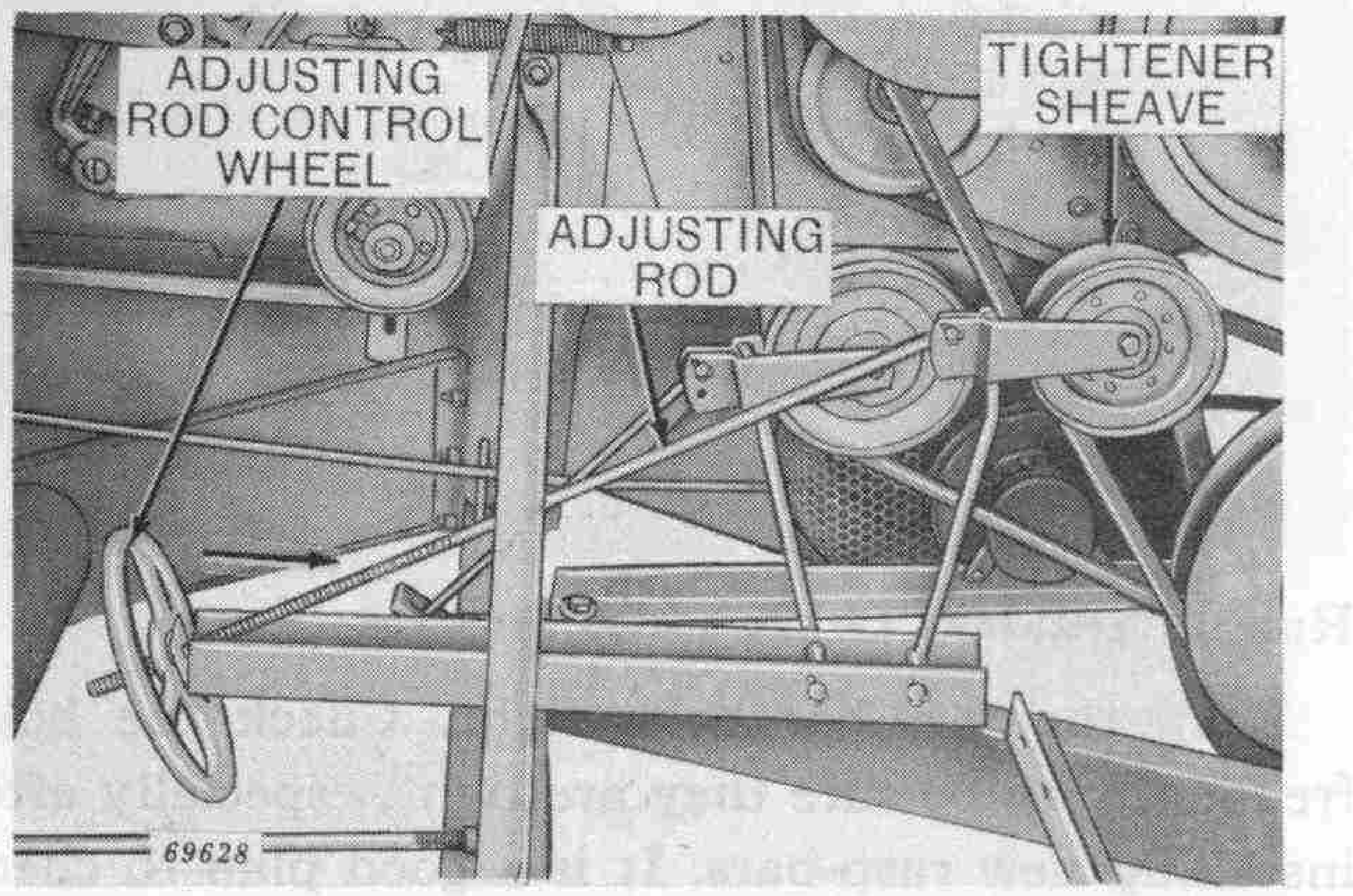
Cylinder Spacing Adjustment—Left-Hand Side



Cylinder Spacing Adjustment—Right-Hand Side

Cylinder Drive Belt Tightener Adjustment.

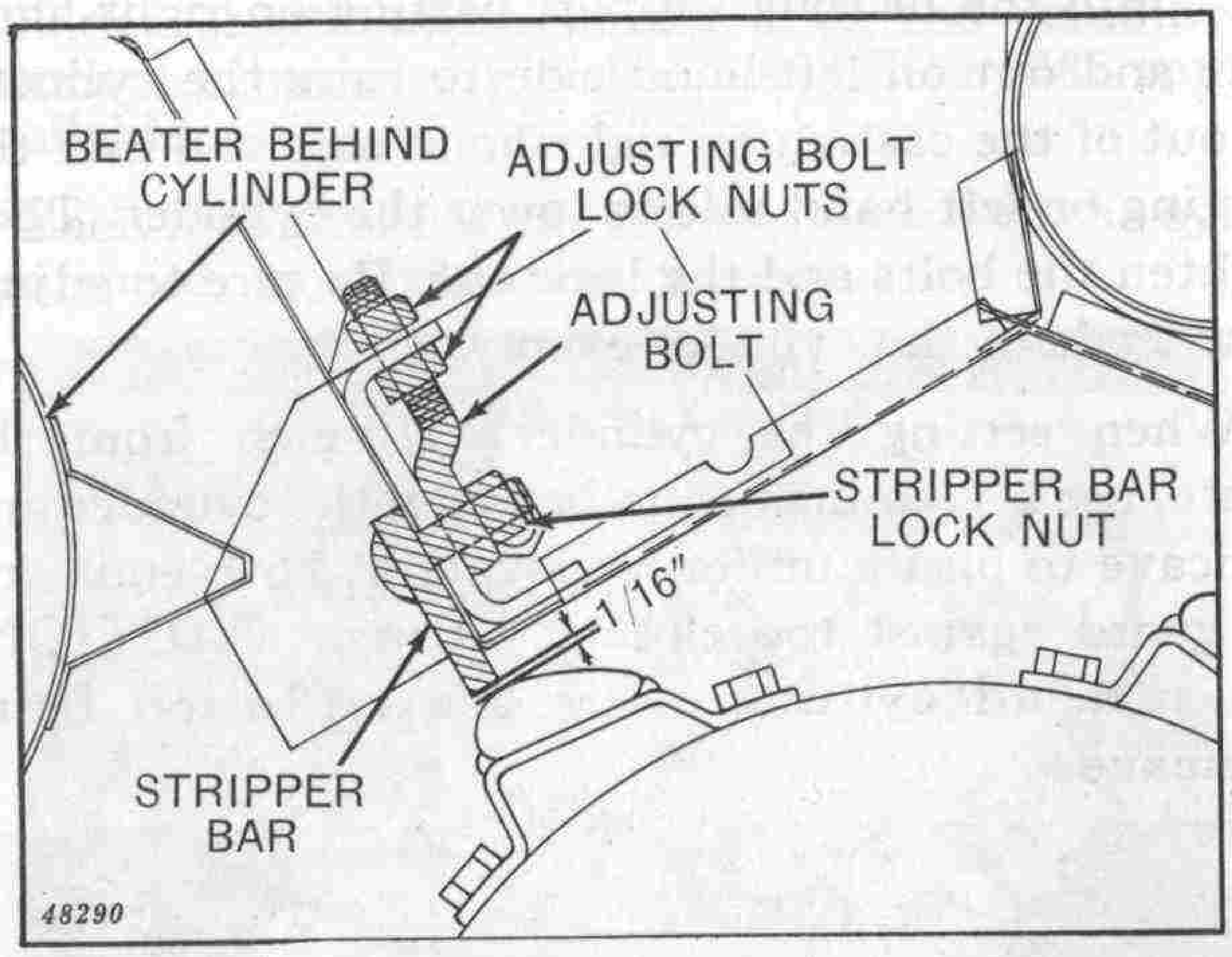
The tightener is adjusted by turning the hand wheel to give sufficient tension on belt for normal operation.



Cylinder Drive Belt Tightener

Cylinder Stripper Adjustment.

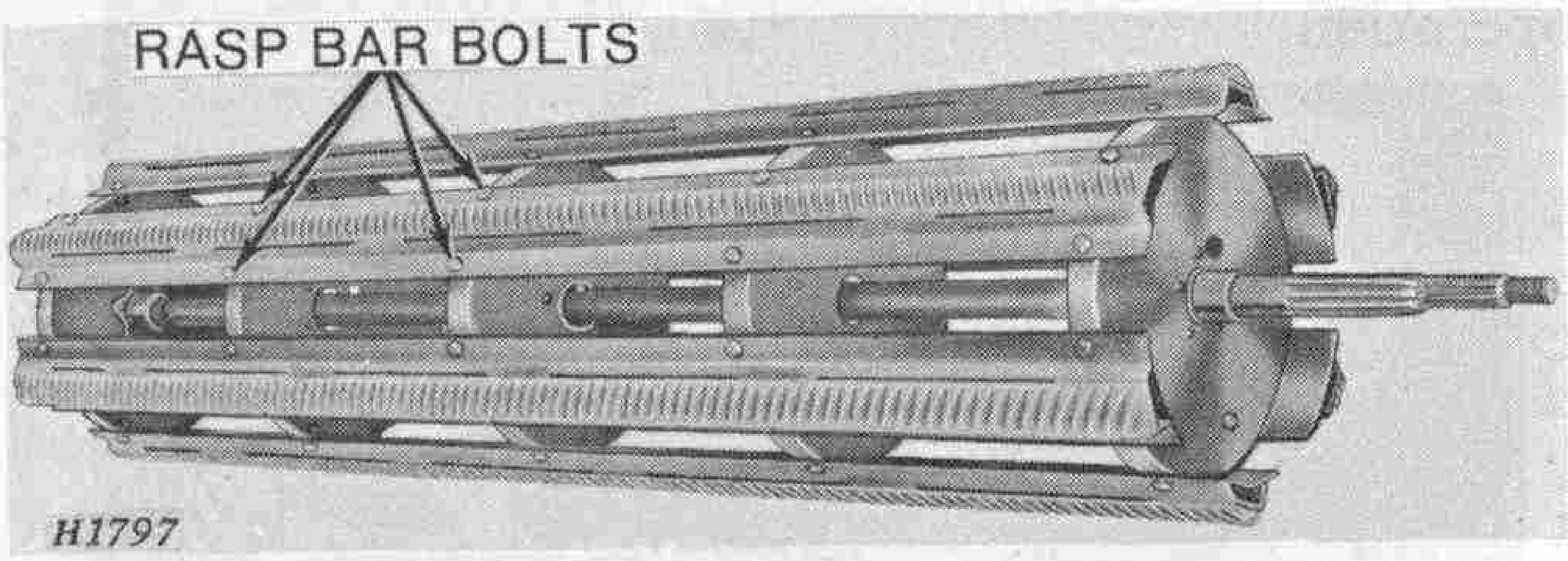
The heavy stripper bar, located just above and slightly to the rear of the center of cylinder, prevents material from back feeding around cylinder. The stripper is set 1/16-inch away from cylinder when combine leaves the factory. However, if cylinder back feeds, check the spacing between the stripper and cylinder bars. Because of normal wear, the stripper bar may have to be readjusted.



Cylinder Stripper Adjustment

To adjust, open the door over the cylinder. Loosen the five lock nuts which are on the bolts that hold the stripper bar in place. Adjust the stripper bar with the two adjusting bolts by letting the stripper bar come in contact with a cylinder bar and then raising 1/16-inch. Tighten all nuts after adjustment has been made. **CAUTION: Be sure stripper bar clears all cylinder bars 1/16-inch.**

CARE OF CYLINDER AND CONCAVE GRATE.



Cylinder

Rasp-Bars.

Keep the rasp-bar bolts tight. Check the bolts frequently to be sure they are tight, especially after installing new rasp-bars. It is a good plan to check the rasp-bar bolts after combine has been operated for a few hours and tighten if necessary.

In fields where rocks are numerous, be extremely careful to prevent them from getting onto platform and into cylinder. Bent cylinder rasp-bars do not have the proper relationship to grate. The result is poor threshing at the point where bars are bent. If rasp-bars are bent, they should be straightened immediately. Rasp surface should be checked with a straight edge after straightening.

Whenever cylinder rasp-bars must be replaced, be sure they are placed opposite each other on the cylinder to maintain proper cylinder balance.

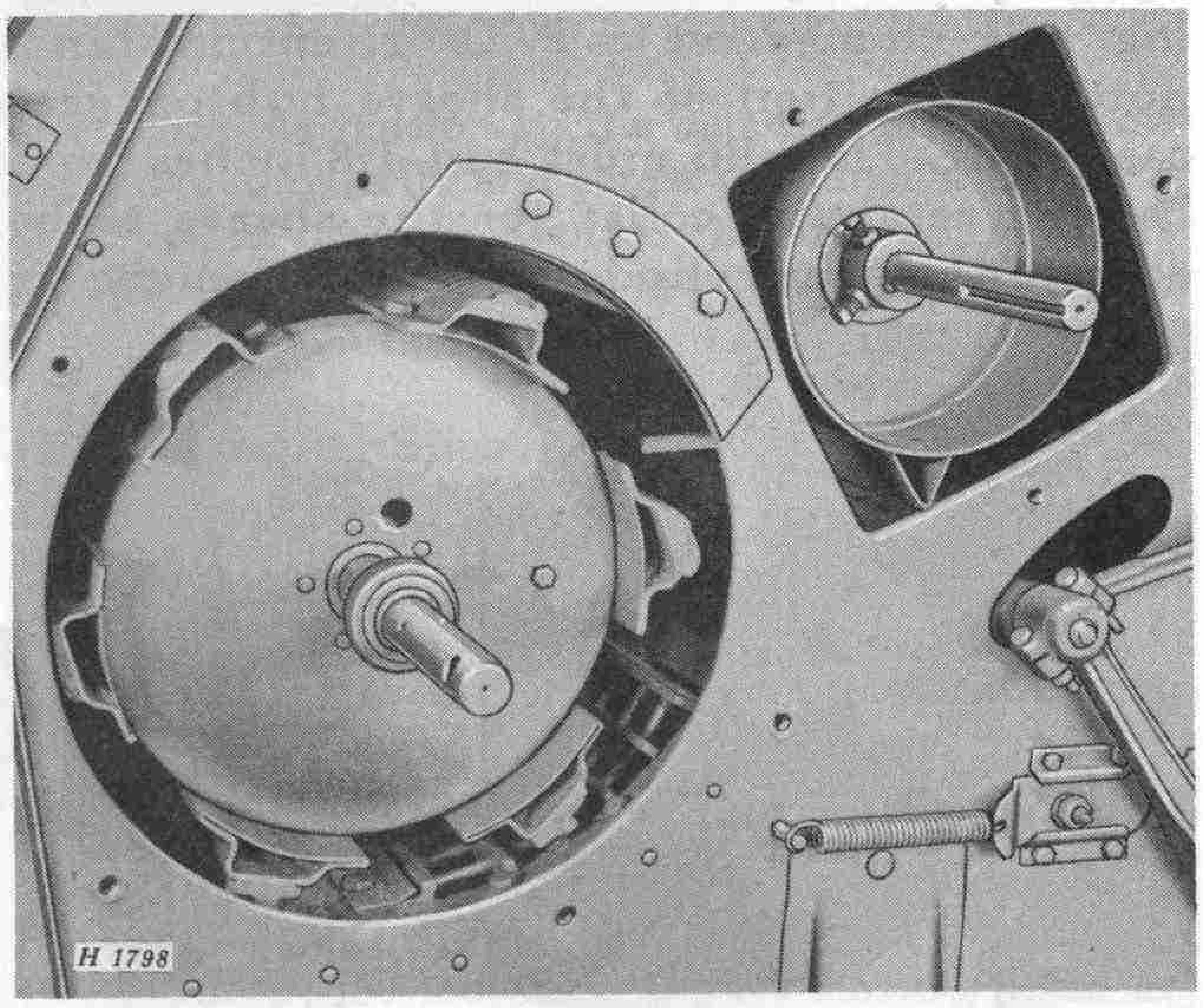
Order: AP23200H—Two balanced cylinder bars, one right-hand and one left-hand, complete.

REPLACING THE CYLINDER.

Removal. Remove the outer sheave half from the right-hand end of the cylinder shaft (see page 32). Slide the inner sheave half off the cylinder shaft. Remove snap ring from cylinder shaft. Release the shaft from the right-hand bearing by unscrewing the locking collar.

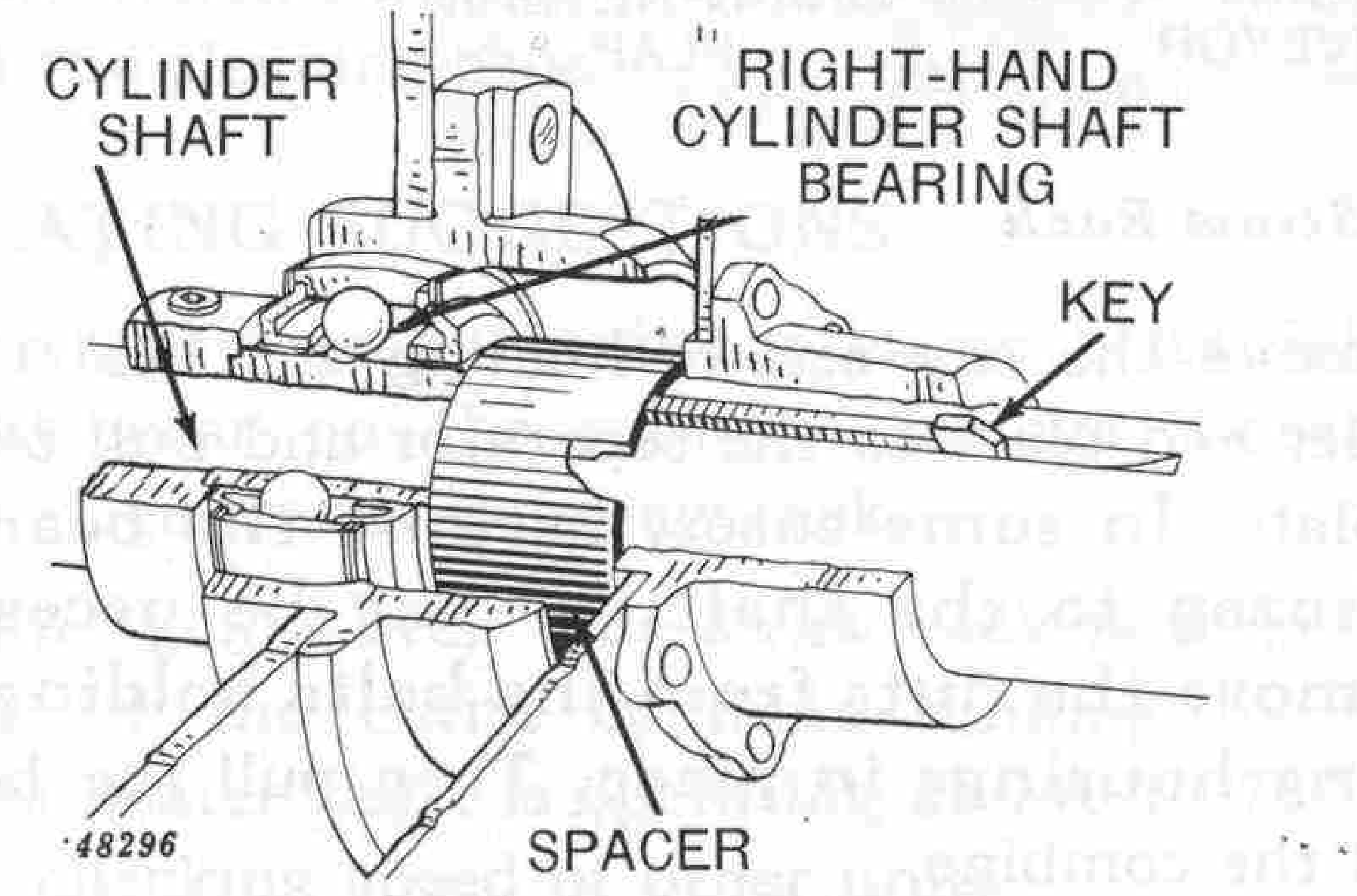
Remove the cap screws holding the beater and cylinder end plate to the separator left-hand side sheet. Pull out the cylinder together with the end plate which is held to the cylinder shaft by the bearing and bearing bracket. (The illustration below shows the cylinder and end plate removed.)

Installation. Slide the cylinder into the combine from the left-hand side and replace end plate if it has been removed. Tap the cylinder shaft to the



Cylinder and Beater End Plate Removed

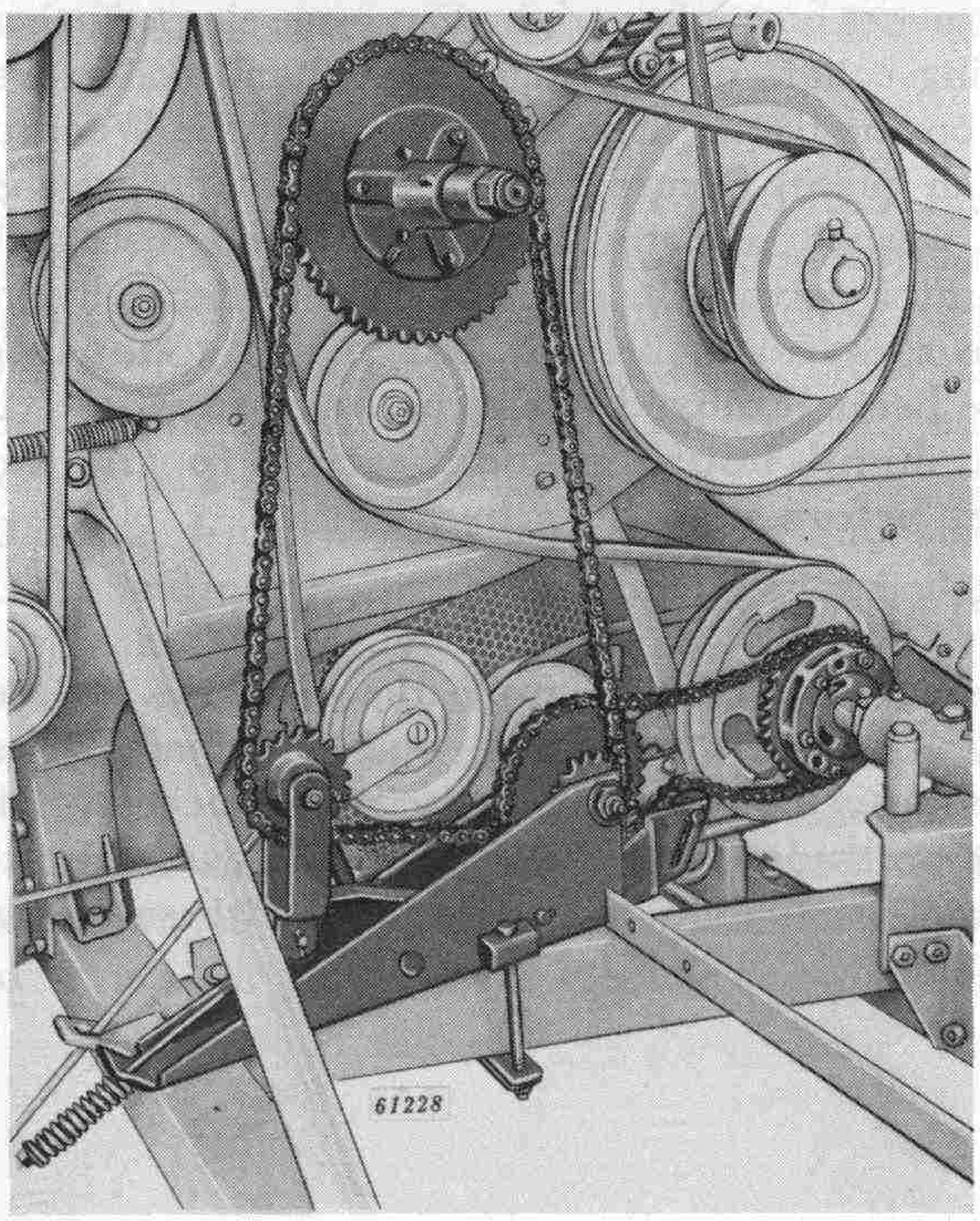
right until the spacing collar on the cylinder shaft is snug against the right-hand bearing. This will center the cylinder in the combine. Make sure this spacing collar is in place between right-hand cylinder bearing and right-hand cylinder head hub with countersunk end of collar over end of key. Tighten the locking collar on the right-hand bearing, and replace snap ring. Then turn the cylinder several revolutions to be sure the cylinder turns freely. After installing the cylinder, check spacing between cylinder and concave.



Spacer on Right-Hand End of Cylinder Shaft

CYLINDER AND CONCAVE GRATE SPECIAL EQUIPMENT

SLOW SPEED ATTACHMENT.



Slow Speed Attachment

For very large seed crops such as peas and large edible beans, a slow speed attachment consisting of sprockets and steel roller chains can be furnished to operate the cylinder at 175, 250, or 350 rpm.

The slow speed attachment parts (except for cylinder driven sprocket) can be obtained as shipping package number 15884HH. The cylinder-driven sprockets required to obtain the different speeds are:

P 44934 H—175 rpm Cylinder-Driven Sprocket
P 44935 H—250 rpm Cylinder-Driven Sprocket
P 44936 H—350 rpm Cylinder-Driven Sprocket

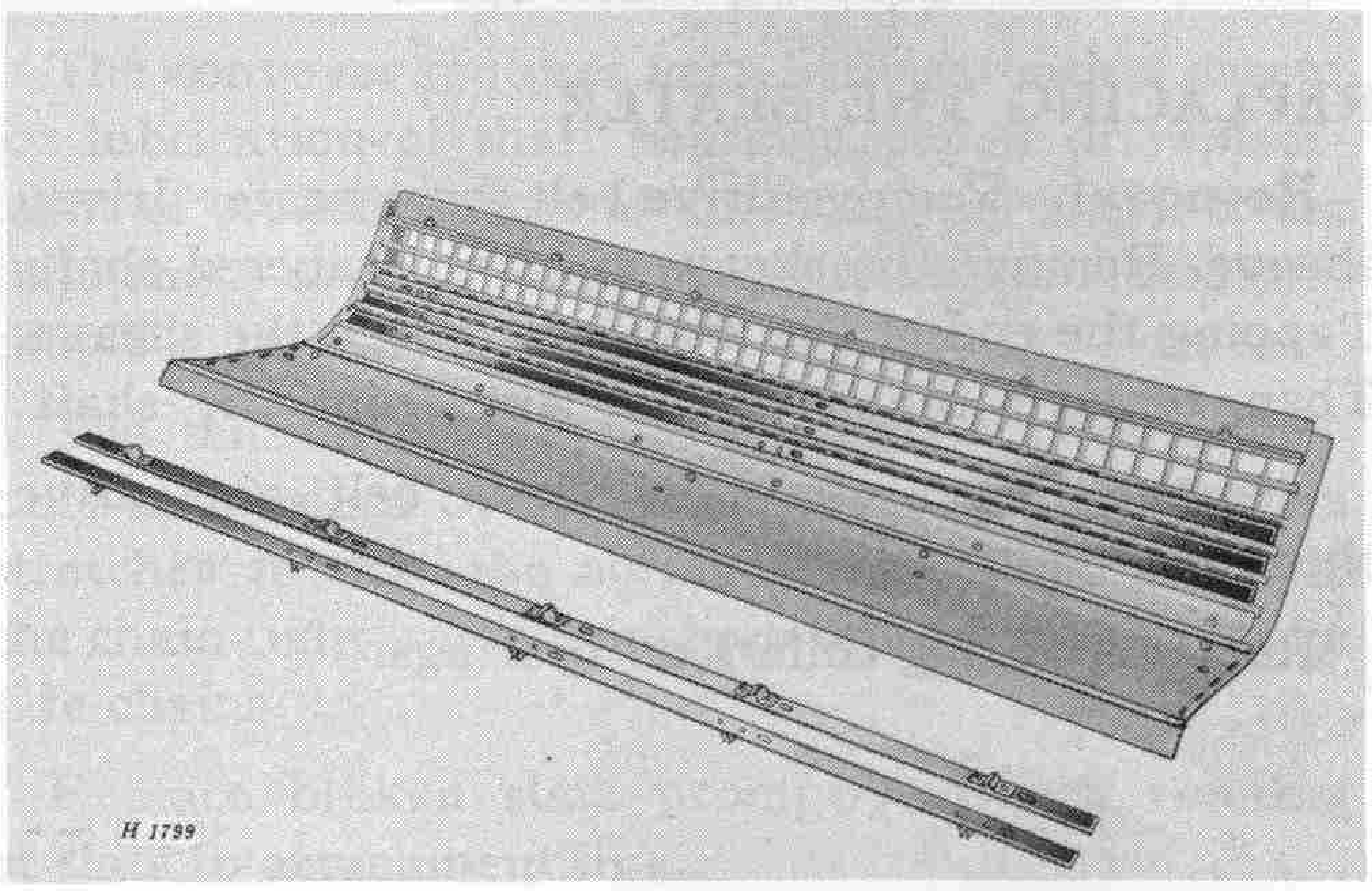
As a safety factor, the driven sprocket is equipped with a shear bolt.

If the 1/4-inch shear bolt breaks, use the 5/16-inch bolt furnished and insert in the 11/32-inch hole. **CAUTION: Never use more than one shear bolt at a time. The 1/4-inch bolt is to be used in the 9/32-inch hole only.**

CONCAVE GRATE COVER PLATES.

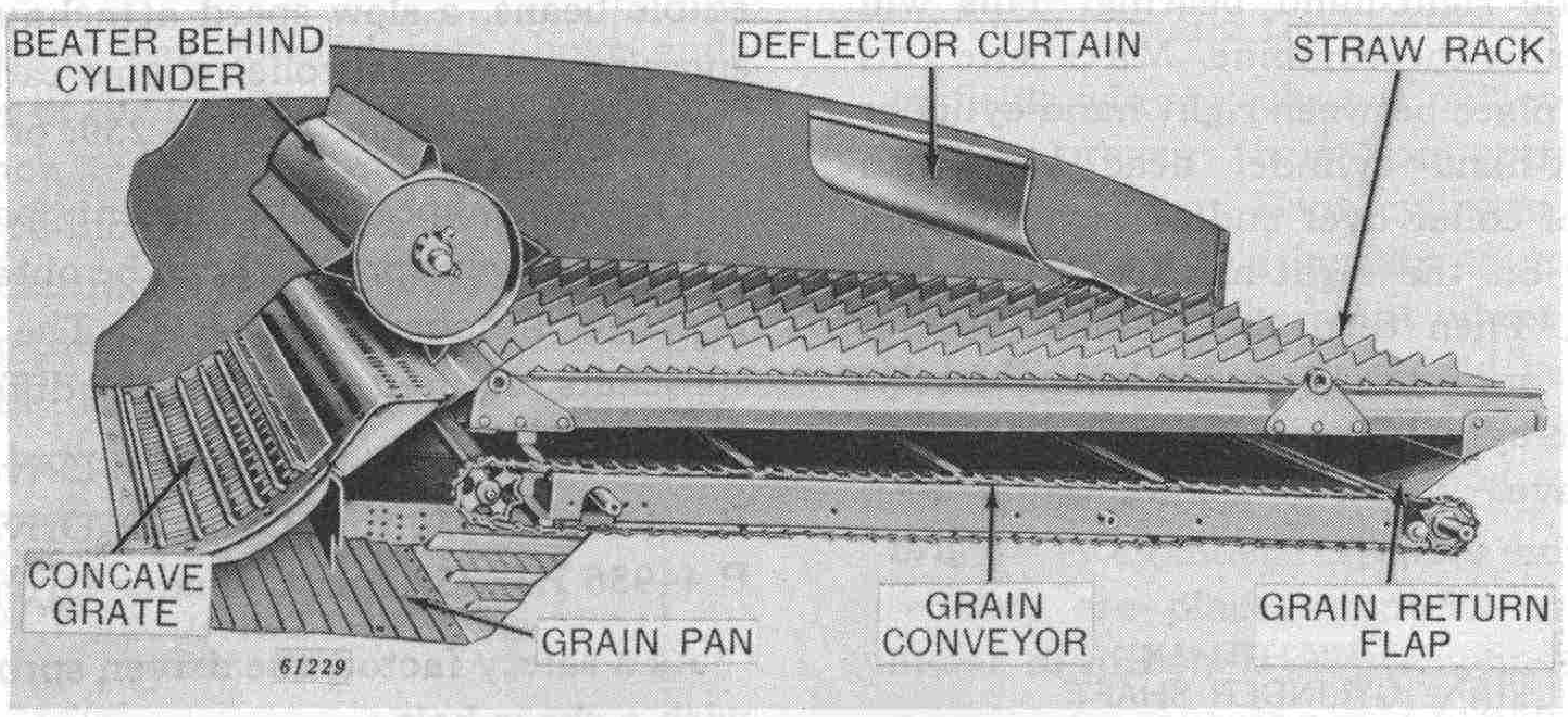
Hard-to-thresh crops, such as clover and some grass seeds, require an exceptionally aggressive threshing action to loosen the seed. Concave snap-on cover plates are available to prevent the material from falling through the front portion of the grate. They hold the material in the threshing zone longer so more threshing can be performed.

The cover plates snap into place over the grate openings. A set of five cover plates can be obtained by ordering shipping package 15887HH.



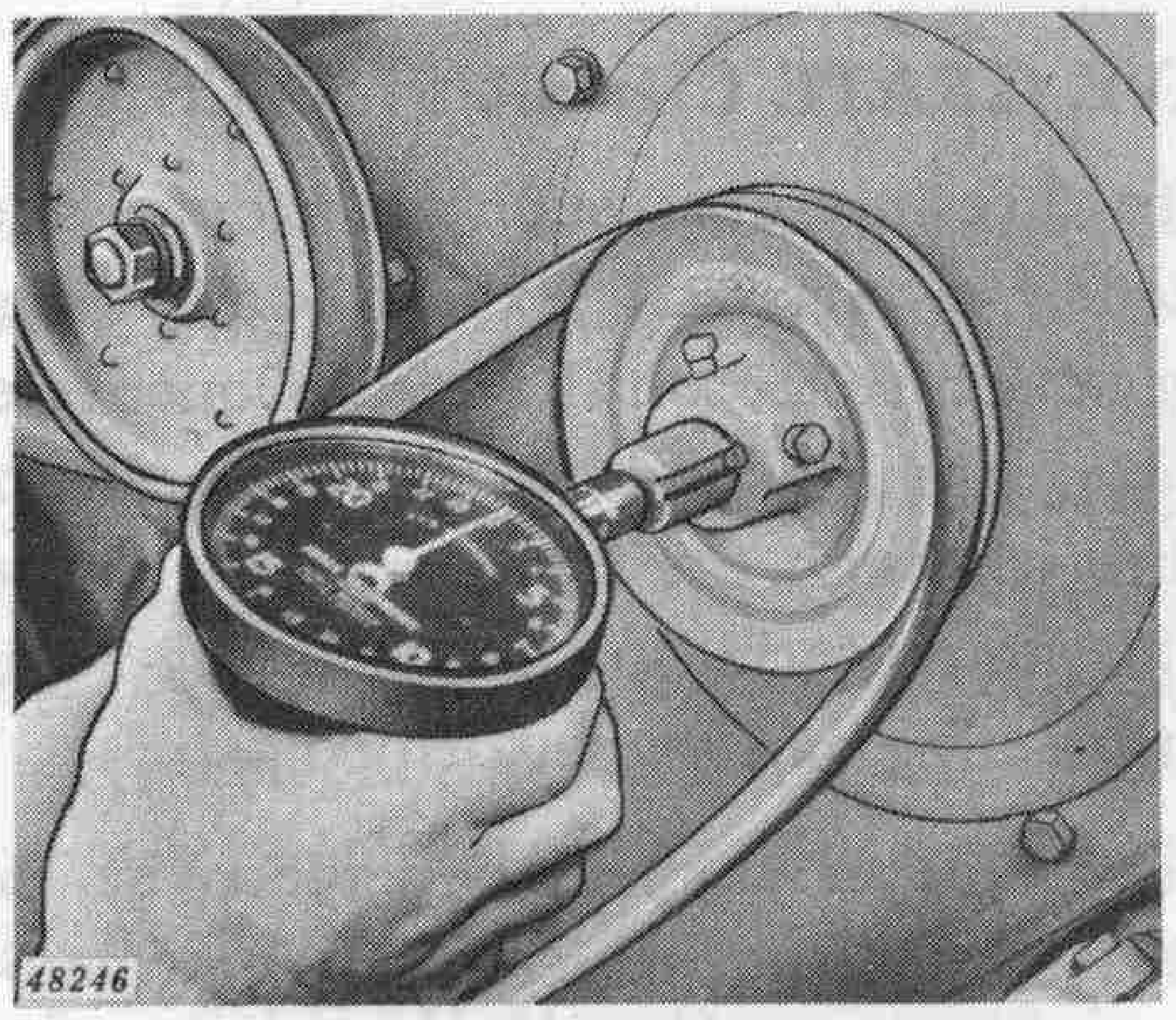
Concave Grate Cover Plates Installed

BEATER BEHIND CYLINDER



Beater Behind Cylinder and Straw Rack

The beater behind the cylinder slows down the material coming from the cylinder, tears apart the straw, and spreads it over the rack for better separation. The speed of the beater is 740 to 760 rpm at fast idle—no load.



Checking Beater Speed

REPLACING THE BEATER.

Removal. Remove drive belt from beater driven sheave. Remove the sheave from the tapered shaft. Tapping the end of the shaft will loosen the sheave. Then remove the Woodruff key from the shaft.

Remove feeder conveyor drive belt and drive sheaves.

Remove locking collars on bearings.

Remove the cap screws holding the beater and cylinder end plate to the separator and pull off the end plate. **In some cases, because the bearings are frozen to the shaft, it may be necessary to remove the nuts from the bolts holding the bearing housings in place.** Then pull the beater out of the combine.

Installation. Slide the beater into the combine with the tapered end of the shaft first. Guide the tapered end of the shaft through the right-hand beater bearing. Install the beater and cylinder end plate and bolt it in place. Locate beater in the combine so the shaft on the right-hand side extends four inches beyond the right-hand side sheet. Tighten locking collars on bearings—right-hand collar first. Put on the beater driven sheave, with the Woodruff key in place. Secure the sheave with flat washer, lock washer, and the large nut. Then install the separator drive belt. Reinstall the feeder conveyor drive sheave and belt. **If the bearing housings have been removed with the beater, rebolt the right-hand housing and bearing to the side sheet before installing beater.**

REPLACING THE BEATER SHAFT.

Remove the beater from the combine. Loosen screws in beater hubs and pull out shaft. When installing a new shaft, be sure 4-3/4 inches of the shaft protrudes from the right-hand edge of beater drum. Fasten shaft to beater hubs with set screws and key.

STRAW RACK

The straw and grain that has not been separated at the grate passes from the beater onto the straw rack where the remaining grain is separated. Grain that falls through the rack is returned to the front end of the cleaning shoe by the grain conveyor. The straw rack is carried on live rubber bushings. No wear occurs on the bushings if clamps are kept tight. No lubrication is required.

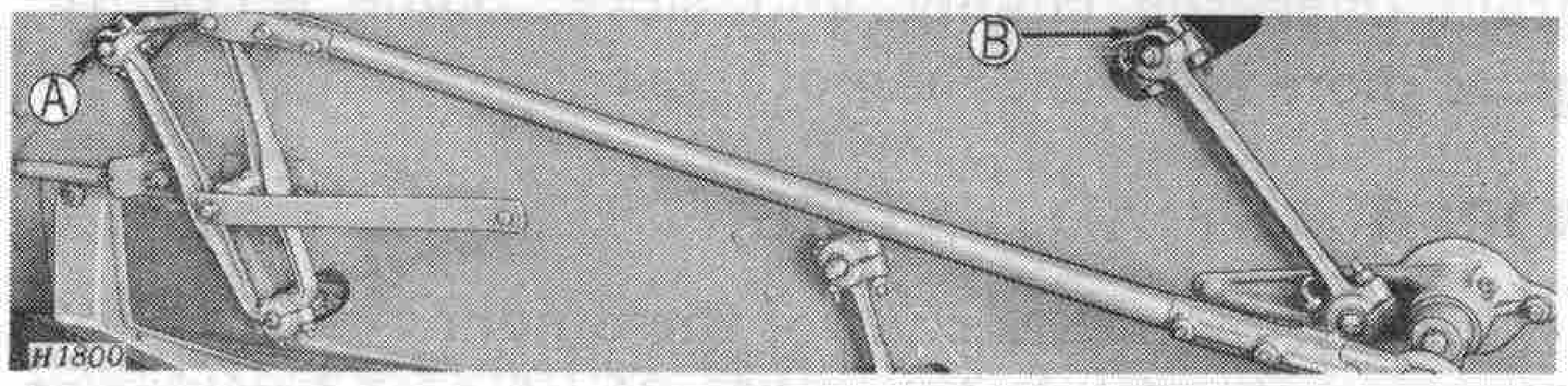
The grain conveyor just below the straw rack operates over a solid bottom sheet. It carries grain that has fallen through the straw rack to the front end of the cleaning shoe.

OPERATING SUGGESTIONS.

Keep the straw rack pitman clamp bolts tight to prevent wear on the rubber bushings. Looseness can damage the entire straw rack.

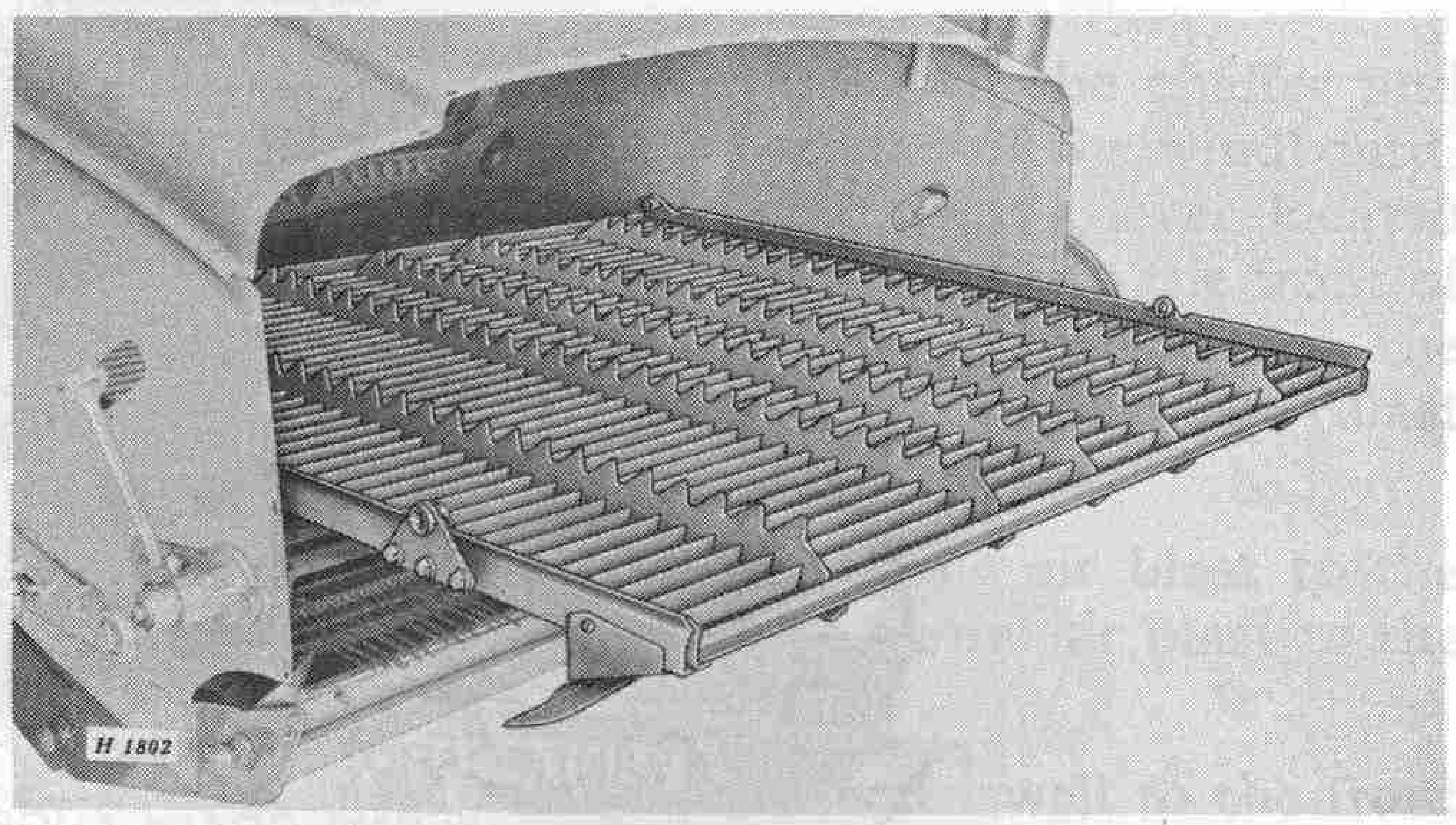
Grain "going over" the straw rack is sometimes caused by the entire combine running too fast. Be sure beater shaft is operating at 740 to 760 rpm before checking speed of other units.

REPLACING THE STRAW RACK.



Straw Rack Studs and Clamps

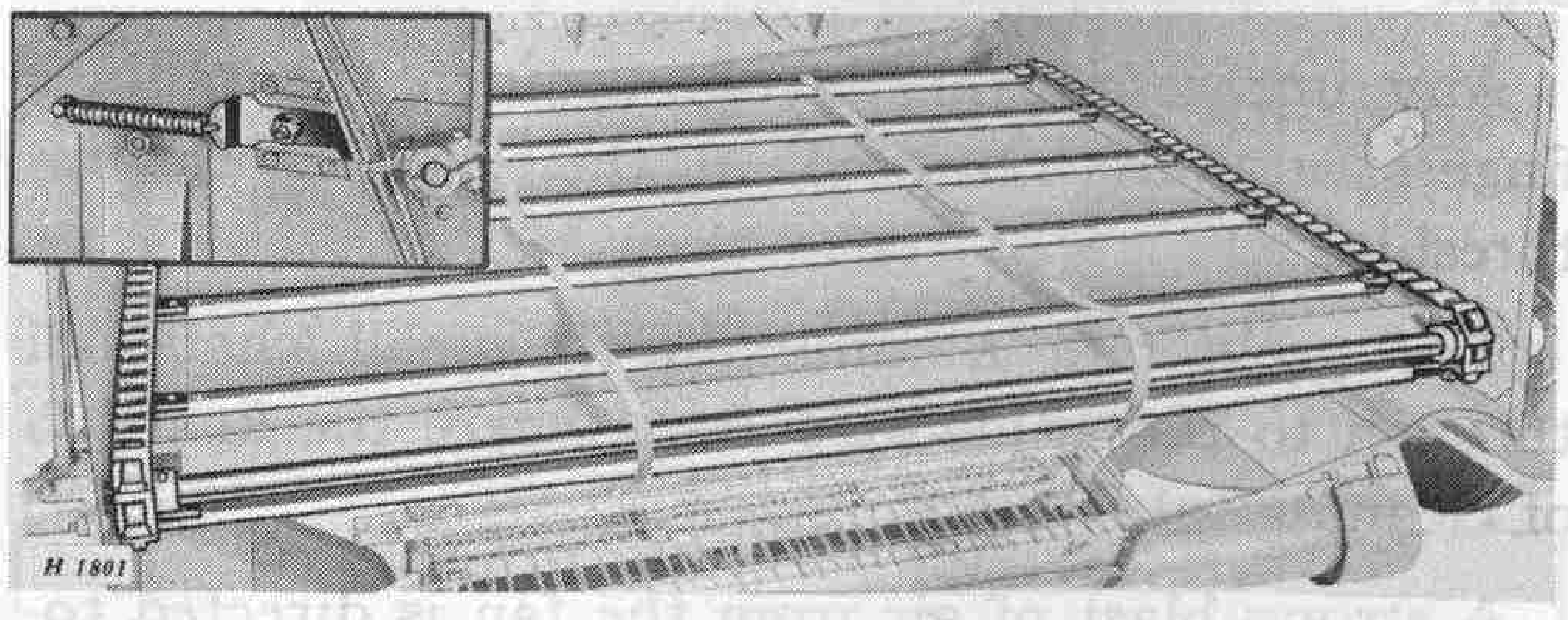
Remove rear hood. On the right-hand front bushing, remove the front bolt and turn the cap to the rear. Remove the other three clamps around rubber bushings for straw rack studs (see "A" and "B"). Loosen nuts on inner end of four tapered studs through rack hangers and brackets. Two pieces of 2-inch x 4-inch wood about five feet long should then be laid on top of the grain conveyor and the straw rack drive pulley turned until the rack rests on these wood pieces. The studs should then be tapped out of the rack brackets. This can be done two ways: (1) Holding a heavy bar against the brackets on rack and driving studs outward. Do not strike threaded end of stud. Screw nut part way on stud to protect threads. (2) Placing a bar between hanger and separator side. Then, prying outward on the hangers at the outside of machine and with a heavy, blunt punch inserted through slots in side of combine, tap inward on rack brackets. Studs are tapered and only require a sharp blow to release them.



Straw Rack Partially Removed

With studs removed, rack can then be pulled out of the combine.

CARE OF GRAIN CONVEYOR.



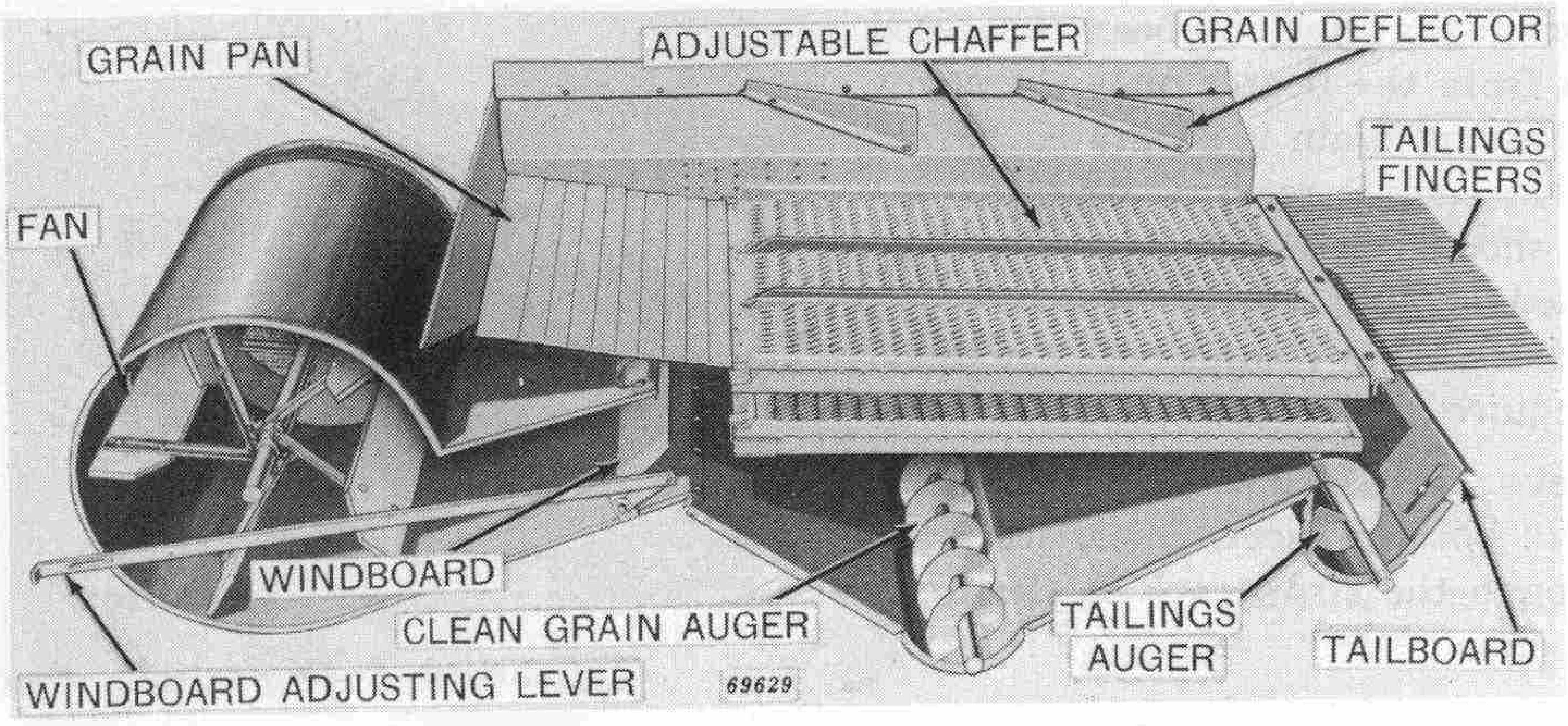
Grain Conveyor

The conveyor requires very little attention except for lubrication of shaft bearings, repair or replacement of broken slats, and an occasional check to see that chain and slats run straight on sprockets and that V-Belt is not slipping.

The tension of the conveyor chain is automatically maintained by coil springs (see insert). If chain stretches so that the spring tension does not hold the chain tight, remove a chain link from each of the side chains.

Replace broken slats promptly. Check riveting of slats to attachment link.

CLEANING UNIT



Cleaning Unit for John Deere 30 Combine

The final process in grain handling is cleaning. This is done by the cleaning fan, adjustable chaffer, and adjustable sieve.

The grain and chaff are conveyed to the front of the adjustable chaffer where the rough cleaning is done. The heavier material passes over the adjustable chaffer and tailings fingers and out of the combine.

Any unthreshed heads fall through the tailings fingers and are returned to the cylinder for rethreshing.

The grain and a minimum of small chaff fall through to the adjustable sieve where the final job of cleaning takes place.

A strong blast of air from the fan is directed toward the chaffer and sieve by the adjustable windboard. This air blast blows away all material lighter than the grain.

Any material that has fallen through the adjustable chaffer, but is too large to pass through the sieve, falls into the tailings auger. It is returned to the cylinder for rethreshing.

The quantity of foreign material in the harvested grain has a decided bearing on the grade and market value of the crop. Weed seeds, dirt, and trash must be ultimately removed. Effective cleaning requires intelligent use of adjustments that are controlled by the operator.

A number of adjustments are built into the cleaning units. Proper balance of these adjustments is possible for handling most every crop and condition.

CLEANING FAN.

One of the most important functions of the air blast of the cleaning fan is to keep the material "alive" on chaffer and sieve. To do this the fan blast must be strong enough so, when combined with the shaking action of the sieves, it will keep chaff lifted slightly off the sieves.

Use as much air blast as possible without blowing grain over the chaffer and sieve. Some crops require more air blast than others for cleaning.

AIR BLAST ADJUSTMENTS.

Two adjustments control the amount of air blast. They are the drive sheaves for the fan and valves at the ends of the fan housing. The position of the air blast on the chaffer and sieve is controlled by the windboard.

FAN SPEED ADJUSTMENT

Shims Between Halves of Drive Sheave on Gear Case Shaft	Shims Between Halves of Driven Sheave on Fan Shaft	Speed of Fan
0	6	870 rpm
1	6	840 rpm
2	6	800 rpm
3	6	770 rpm
3	5	735 rpm
4	5	700 rpm
4	4	675 rpm
5	4	645 rpm
5	3	610 rpm
6	3	580 rpm
6	2	555 rpm
6	1	530 rpm
6	0	520 rpm

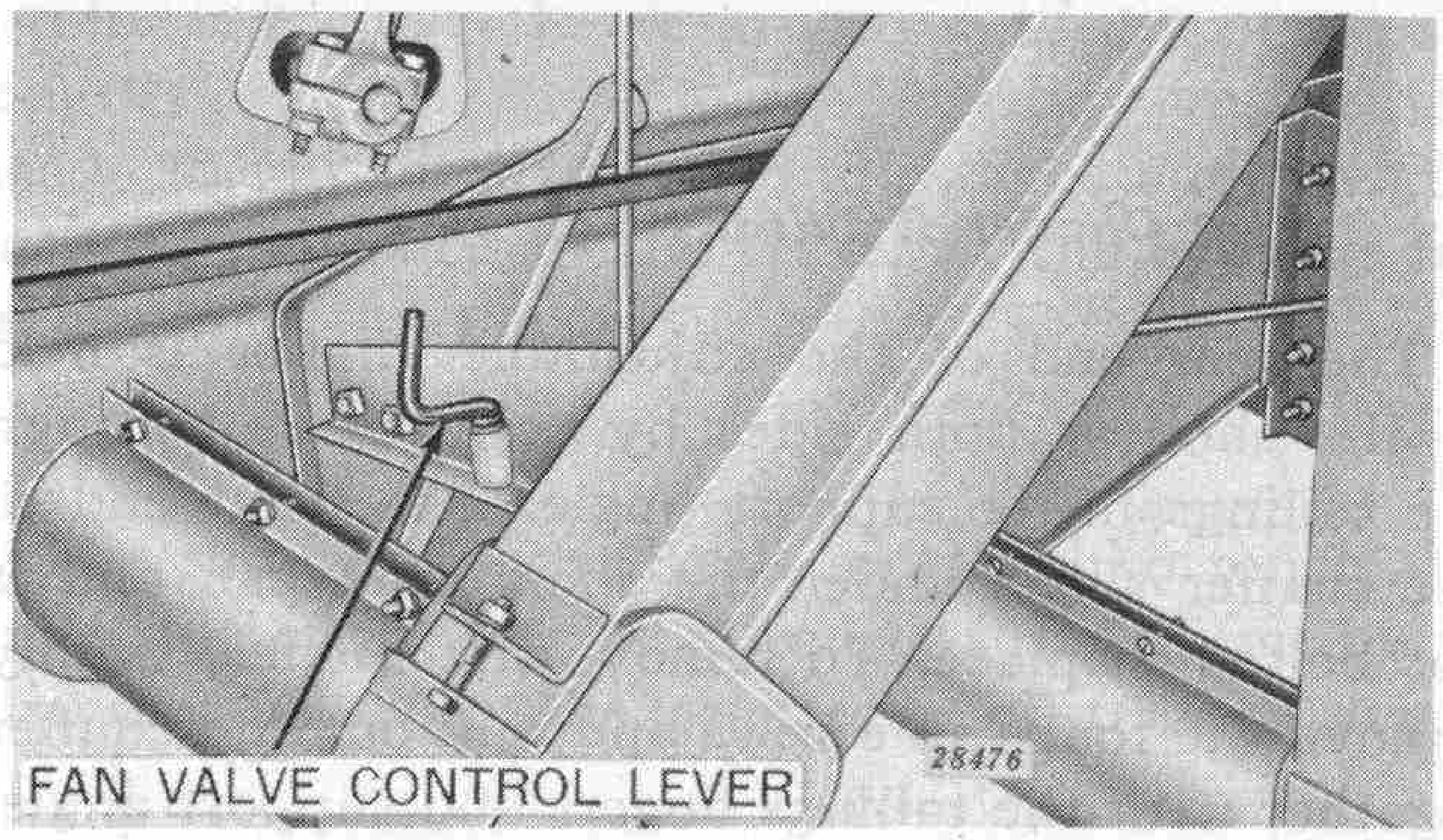
Valves at Ends of Fan Housing.

These valves are closed or opened to control the amount of air taken in by the fan. When cleaning a light seed, they should be partly or completely closed; when handling a heavy seed, they should be opened wide.

Both valves at the ends of fan housing are adjusted by the one lever located at the rear of the combine between the tailings elevator and right-hand side of combine. To open valves, push lever forward; to close, pull lever to the rear.

Do not close fan valves too much; an erratic blast may result, It is better to change the fan speed (see page 38).

Uneven distribution of blast on the sieves may be due to the fan not being centered between ends of fan housing, or fan spiders not being in line on shaft. Check and correct, if necessary.



Fan Valve Control Lever

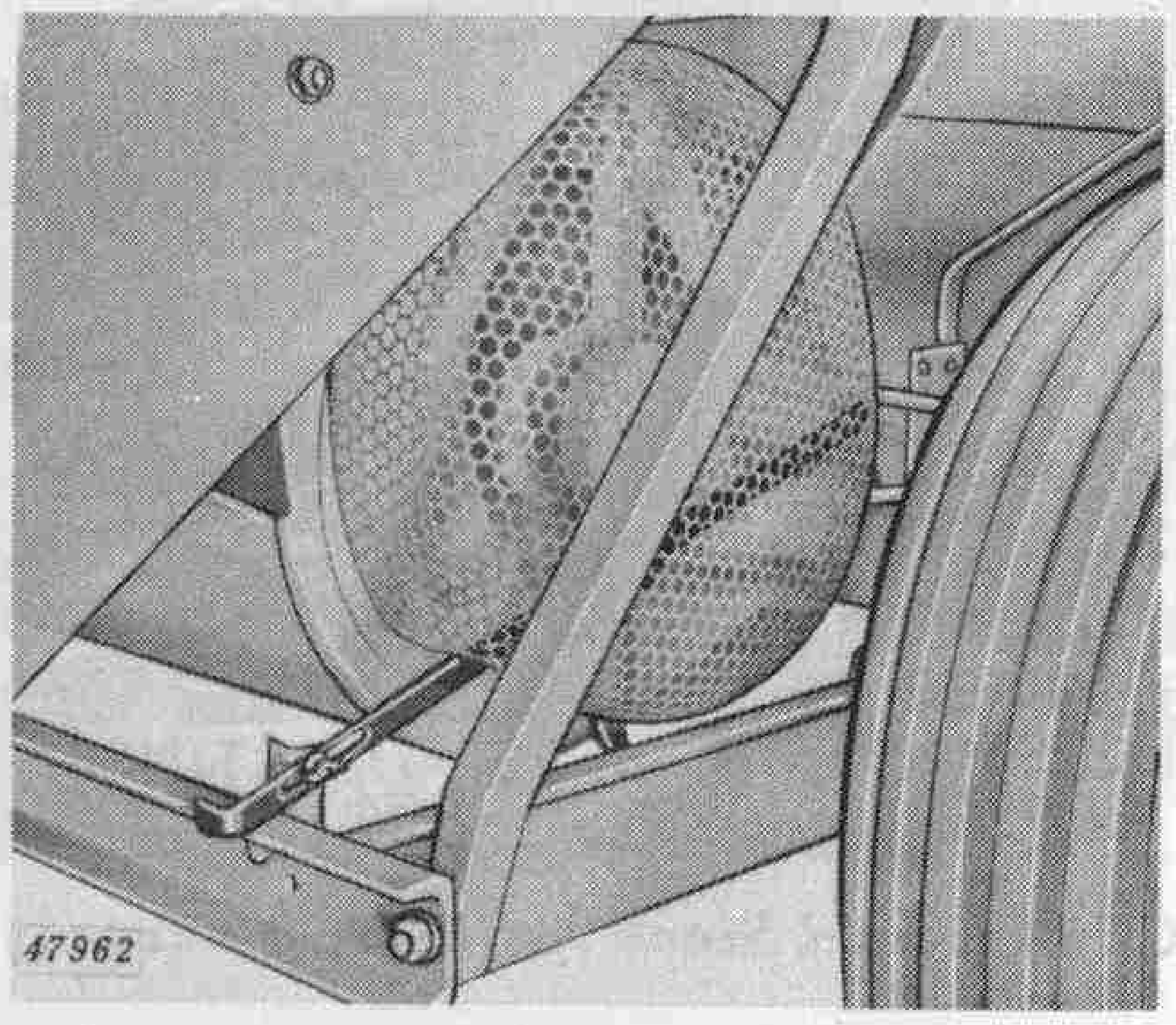
THE COMPLETE OBSERVANCE of one simple rule would prevent many serious injuries each year. THAT RULE IS: "NEVER ATTEMPT TO CLEAN, OIL, OR ADJUST A MACHINE WHILE IT IS IN MOTION."

Windboard.

The position of the air blast on the chaffer and sieve is determined by the setting of the windboard. Windboard position is regulated by a lever located on the left-hand side of combine just to the front of fan housing. The combine is shipped from the factory with windboard set to direct the air blast through the front one-third of the shoe.

Push lever to the rear to throw air blast to the rear; pull lever to the front to throw air blast to the front of shoe.

The air blast should be directed well to the front of shoe when chaffer is heavily loaded. However, if the windboard is tipped to throw the air blast too far forward on chaffer, there is apt to be an accumulation of material at the rear end that will carry grain out of the combine.



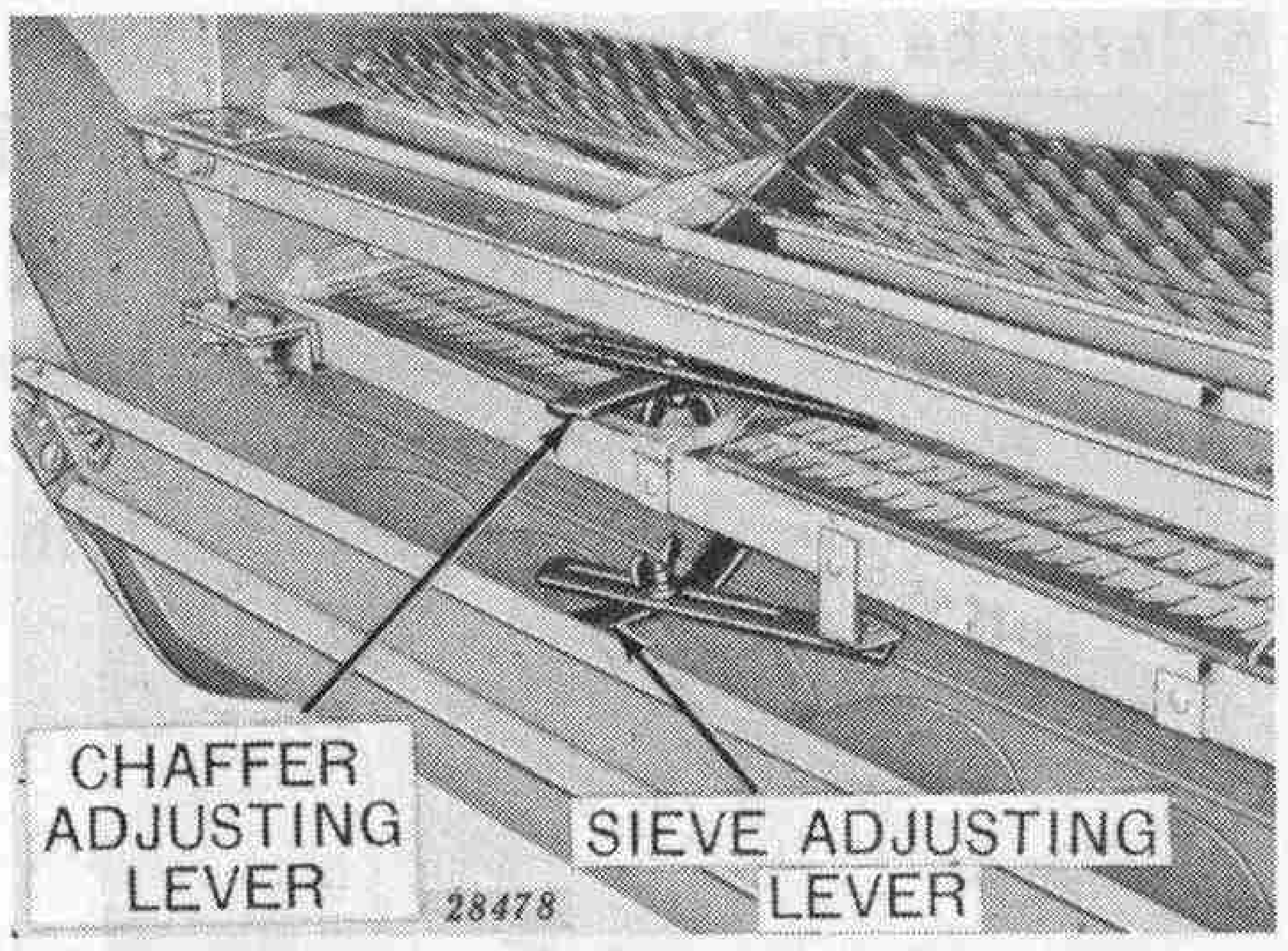
Windboard Control Lever

It pays to be careful for your own sake!
Accidents can . . .
Pain
Lame
Maim
and cost you money!

ADJUSTABLE CHAFFER

The adjustable chaffer does the rough job of cleaning. Its lips are adjustable to control the amount of material that can fall through. The lips should be adjusted so very little of the clean grain, but all of the unthreshed heads pass into the tailings auger. The lips are set closed when combine is shipped. An average setting is about one-half open. Crop conditions may prove that a change from this setting is necessary to save the most grain and produce the cleanest sample.

A good rule to remember is to run chaffer with lips opened as far as possible without admitting too much coarse material and so the grain works through before it passes over two-thirds the length of the chaffer.

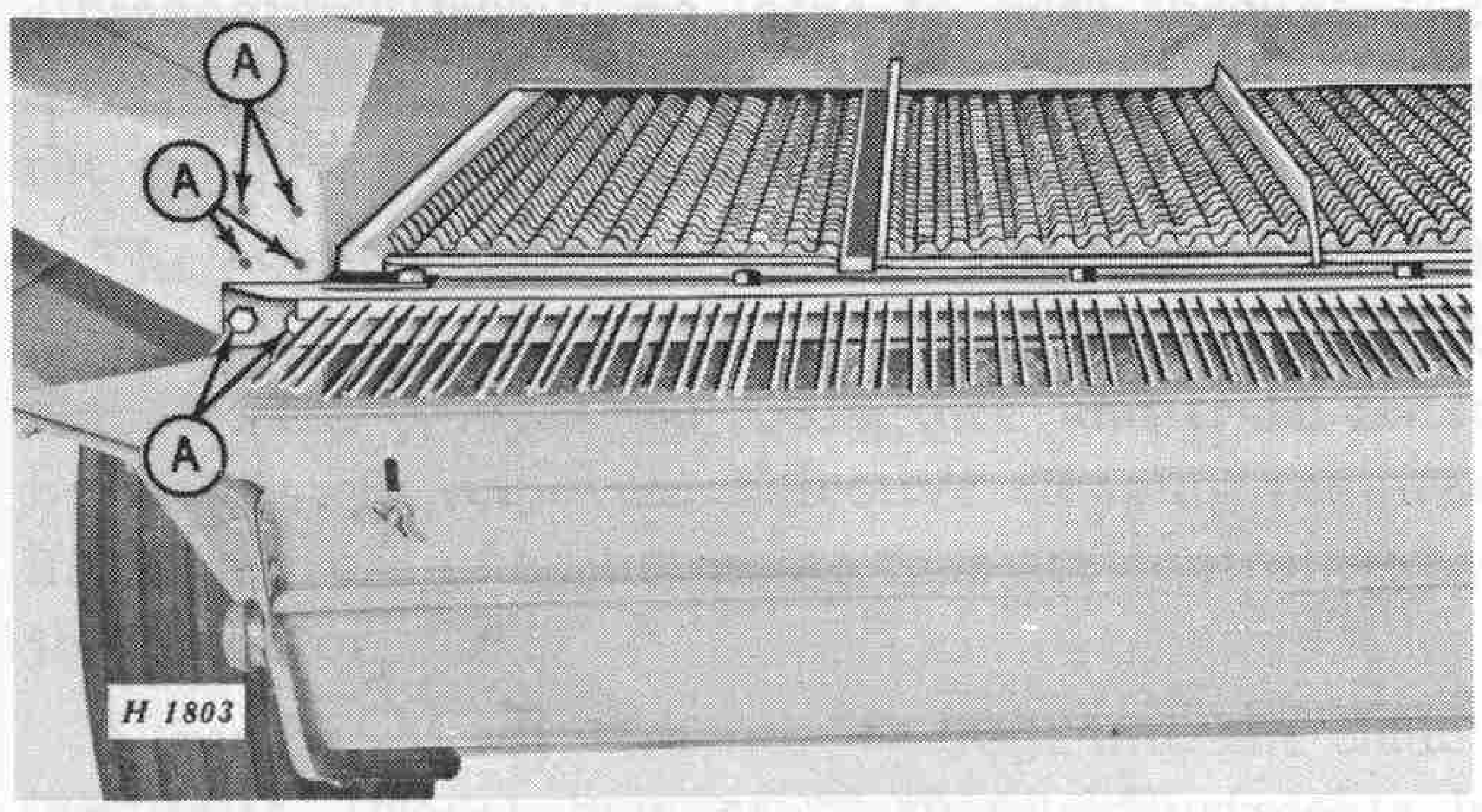


Chaffer and Sieve Adjusting Levers

The position of the lips is regulated by the lever shown above.

Chaffer Height Adjustment.

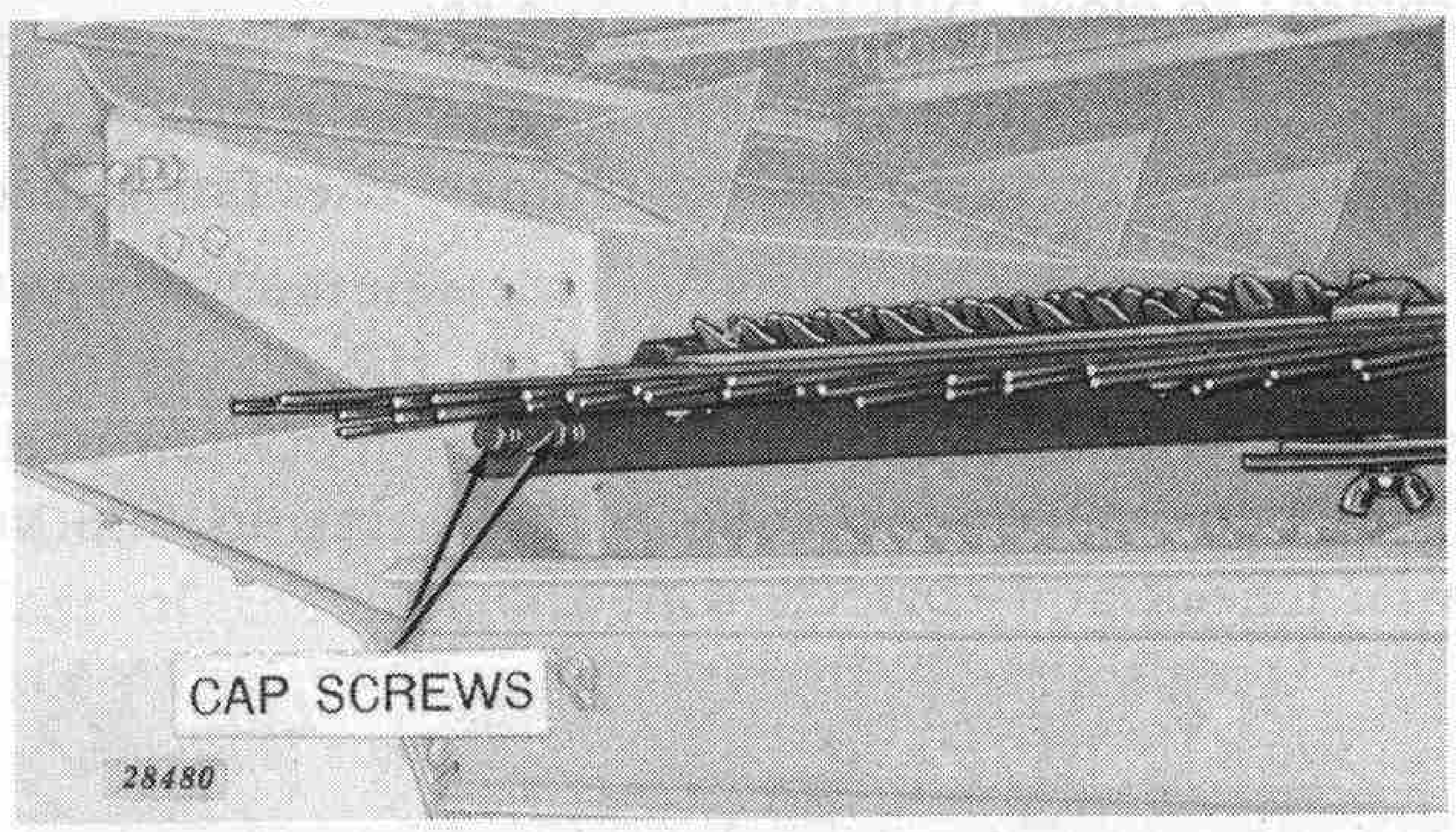
When combining clover and other small seeds that are very light, the blast from the fan tends to blow some of the seed out the back of the combine. The rear end of the chaffer can be raised so the material must be blown "up hill." This will keep the material on the chaffer longer and give the seed a better chance to drop through onto the sieve.



Chaffer Height Adjustment

Three sets of holes "A," have been provided so the chaffer can be set in three different positions depending upon conditions. When the rear end of chaffer is raised, close up the lips until they are almost shut to prevent an excessive amount of chaff from falling through.

Chaffer Replacement.



Chaffer Retaining Cap Screws

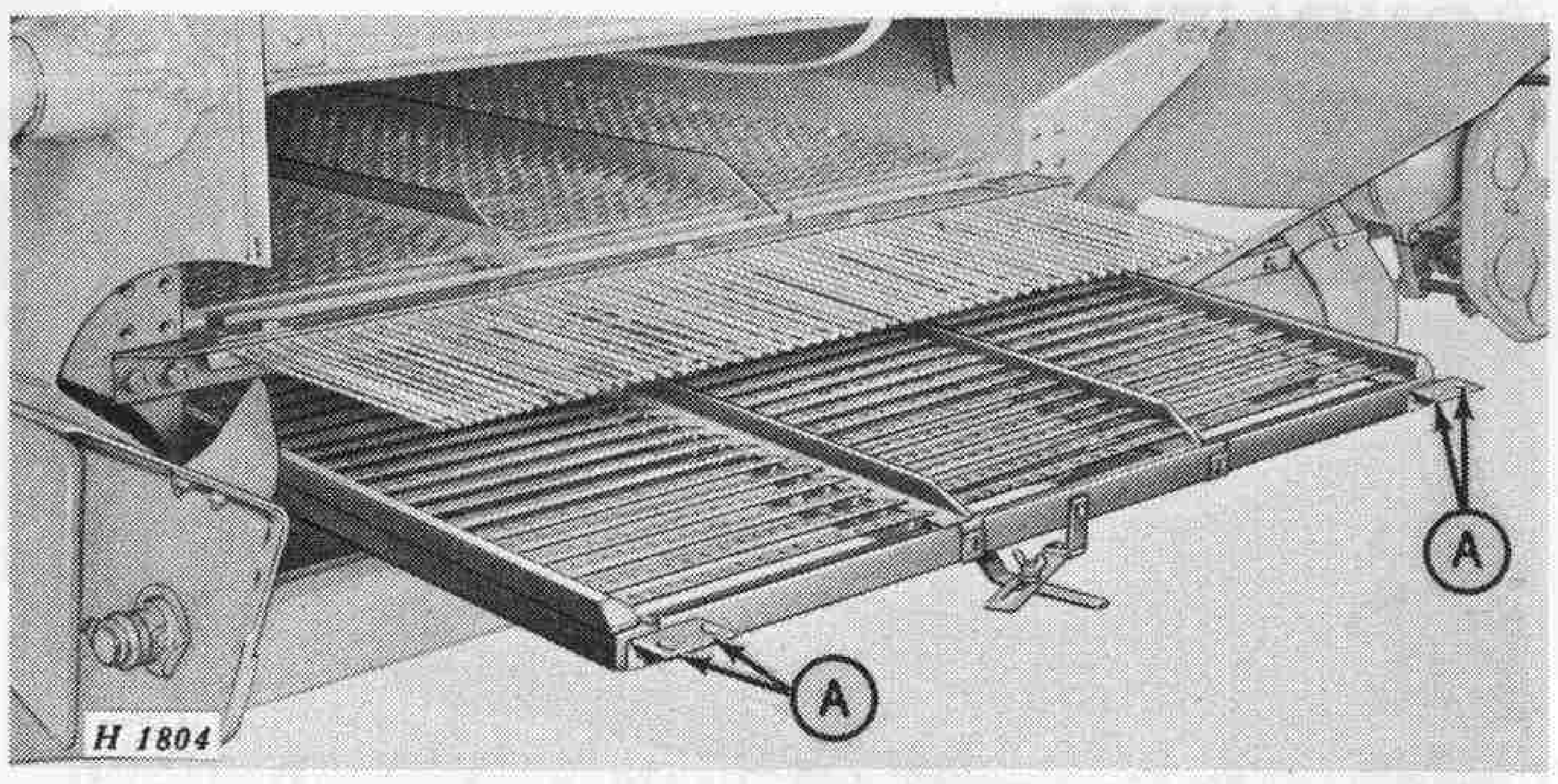
The rear end of the adjustable chaffer is held to the shoe at both sides by cap screws through the tailings finger support angle. The front end of the chaffer slides under the shoe grain pan and is not bolted in place. To remove the chaffer, simply remove the four cap screws and pull out the chaffer together with the tailings fingers and support angle.

When installing the chaffer, be sure the front end slides under the grain pan. Fasten the rear end of the chaffer to the shoe with four cap screws.

ADJUSTABLE SIEVE

The adjustable sieve does the final job of cleaning. Its lips and openings are smaller than those on the adjustable chaffer. The lips should be set so clean grain can fall through before it reaches the tailings auger. The fan blast and shaking action of the sieve will move the remainder of the material to the tailings elevator or out of the combine.

When the combine is shipped, the lips of the adjustable sieve are set in closed position. An average setting is one-third open. The position of the lips is regulated by the lever shown above.



Sieve Partially Removed

Sieve Replacement.

The sieve is held in the shoe by two bolts through the holes in brackets "A." Remove the tailboard support, take out the bolts, and pull the sieve out from the rear of the combine.

TAILINGS FINGERS.

The fingers at the rear end of the chaffer pass long straw out of the combine but allow unthreshed heads to fall through into the tailings auger which carries them back to the center of the cylinder for rethreshing.

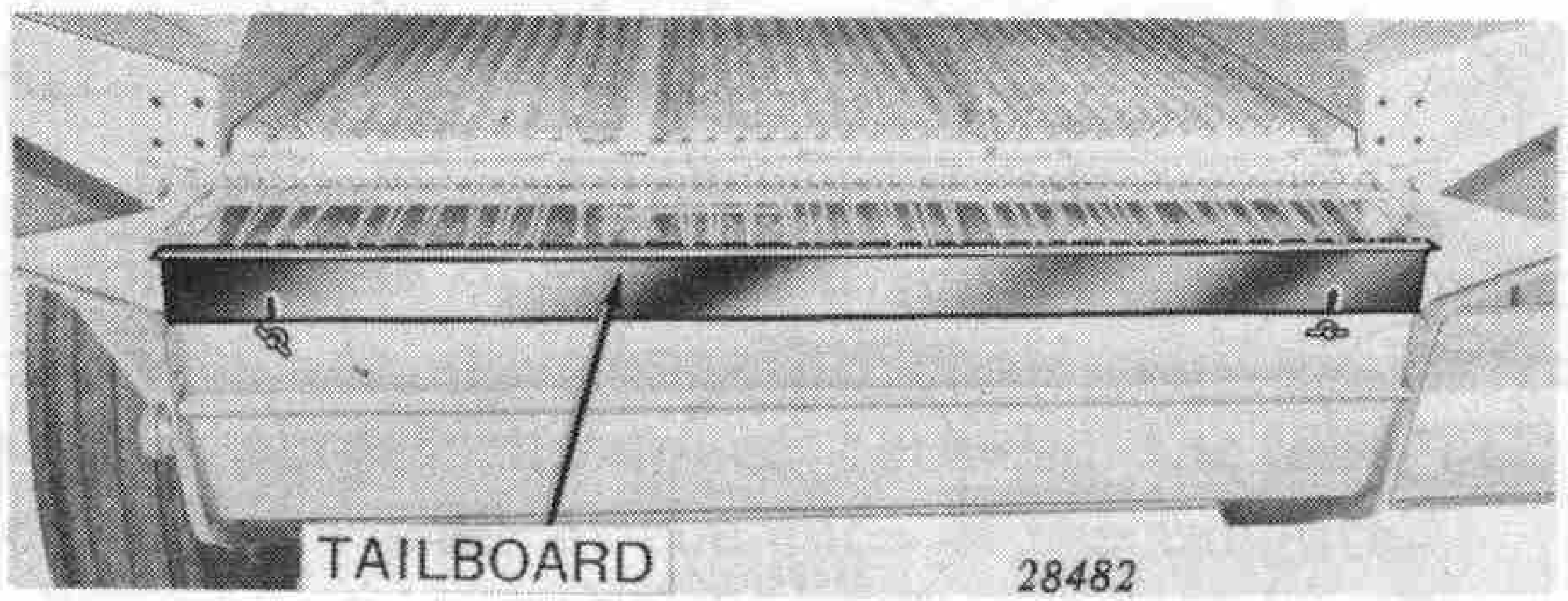
TAILBOARD.

The sliding tailboard can be raised to touch the underside of the fingers or can be lowered until it is almost level with the rear edge of tailings auger housing.

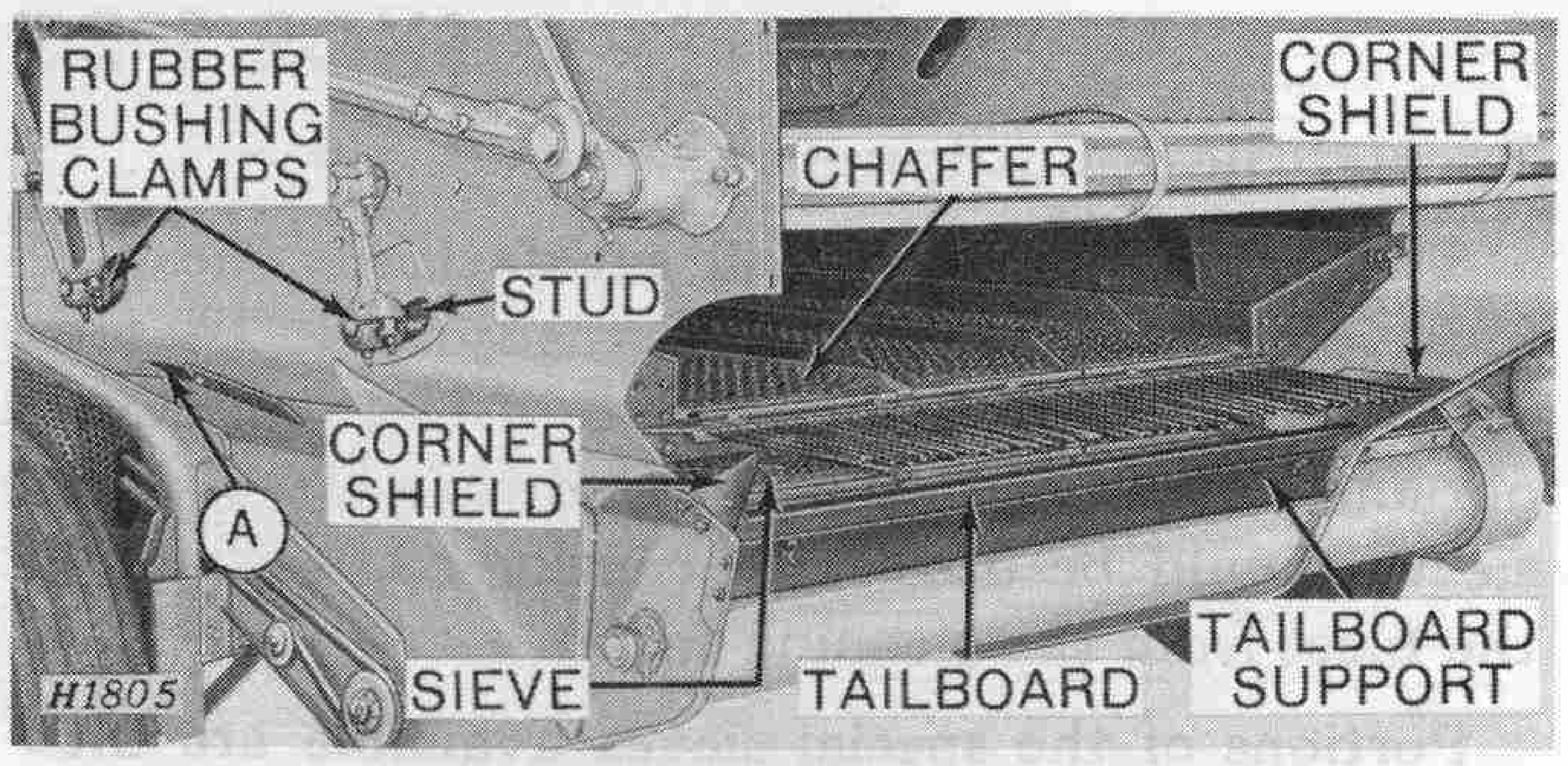
In light chaffy conditions, the tailboard can be lowered to allow the cleaning fan to blow out more of the chaff that has fallen through the adjustable sieve thus reducing the amount of tailings.

If seed is light and blows out with the chaff, raise the tailboard.

Careful adjustment of the tailboard can materially improve the cleaning job under every condition, especially in light seed crops.



Tailboard



Parts to Be Removed So Shoe Can Be Removed

REPLACING SHOE.

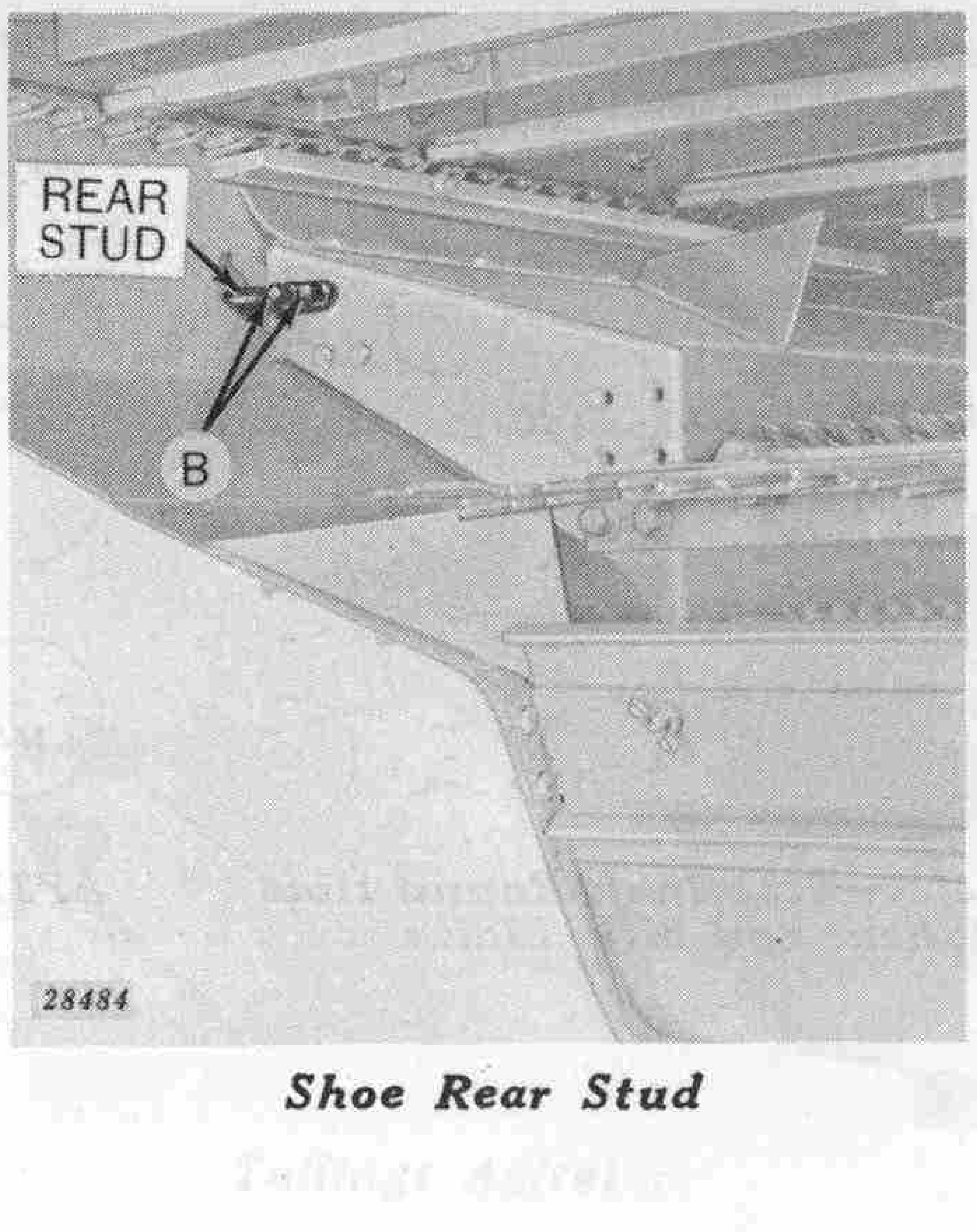
Removal.

Remove chaffer and sieve. Also remove the tailboard, tailboard support, and the corner shields. Remove three bolts holding canvas seal (from fan housing to grain pan) to underside of grain pan. These bolts can be seen when chaffer and sieve are out of the shoe. Remove the four bolts holding the canvas concave shoe seal to front of shoe.

Remove clamps from around rubber bushings and from front and rear shoe studs. Reach up through the hole "A" in bottom of flange on side of separator from ends of front studs. Then remove studs. Loosen set screws "B" that hold rear studs in place. Remove rear studs. The shoe can now be pulled out of the combine.

Installation.

Be certain to bolt the canvas seal between the fan housing and the grain pan in place and the canvas shoe seal to front of shoe before the chaffer and sieve are installed. When installing clamps around rubber bushings on studs, be sure shoe is in the center of its travel. Studs must be located in the center of the slots in the combine side sheets to equalize tension on rubber bushings.



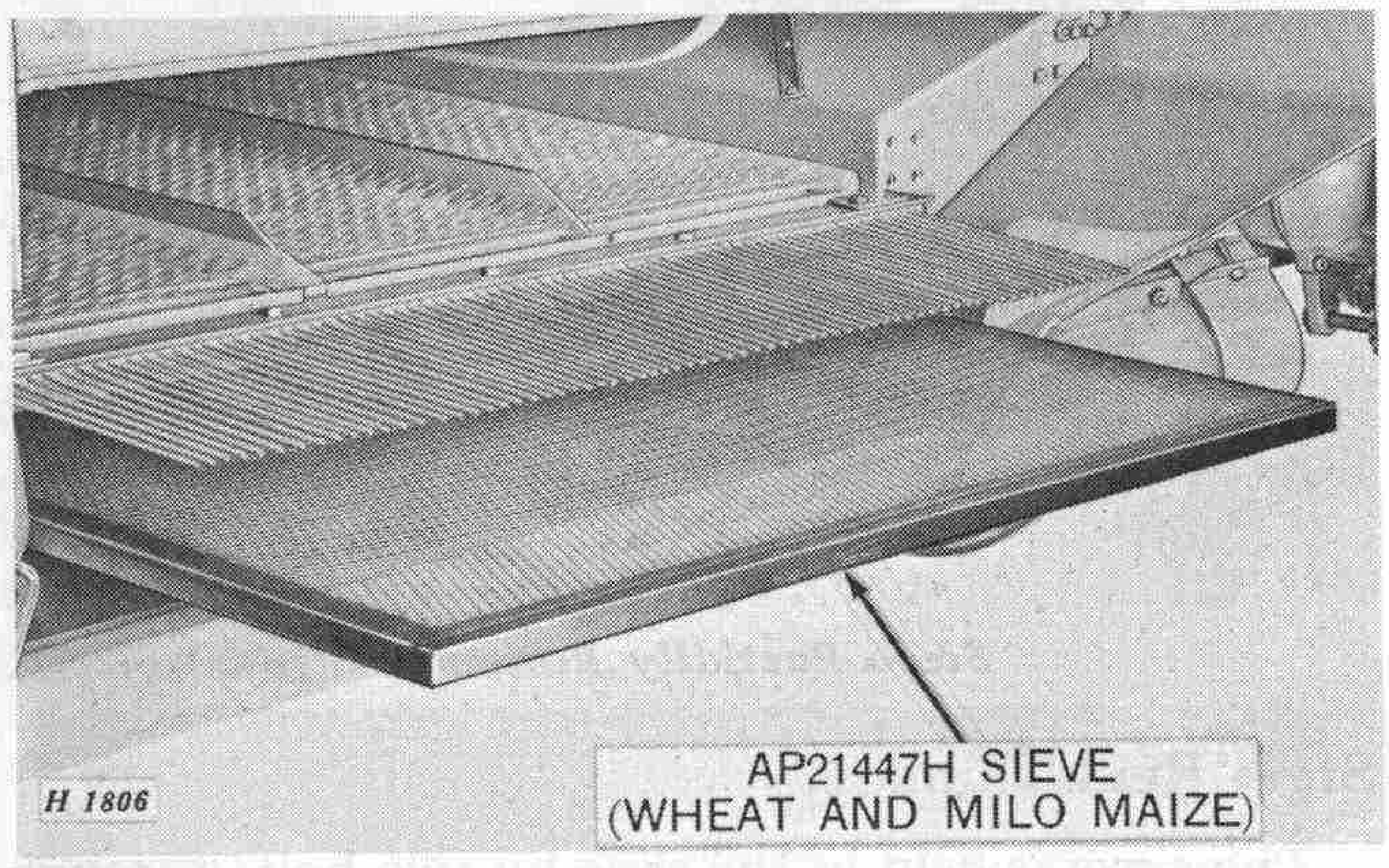
Shoe Rear Stud

SHOE SPECIAL EQUIPMENT

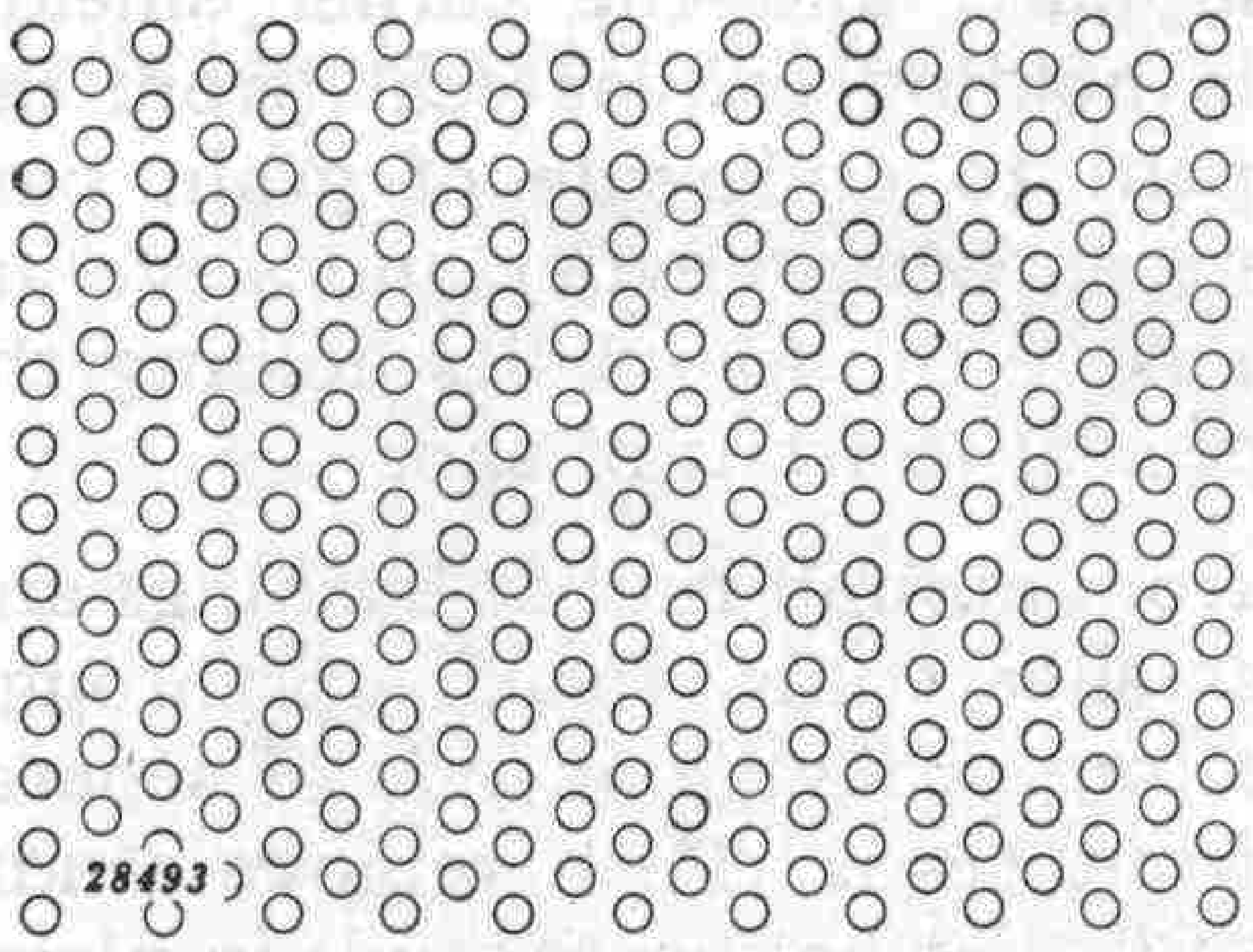
Special Sieve Equipment.

The adjustable sieve will satisfactorily clean almost any crop when properly adjusted. In some seed crops, a slightly better job of cleaning can be obtained with a round or slotted hole sieve. These sieves should be used with caution as they restrict the blast from the cleaning fan.

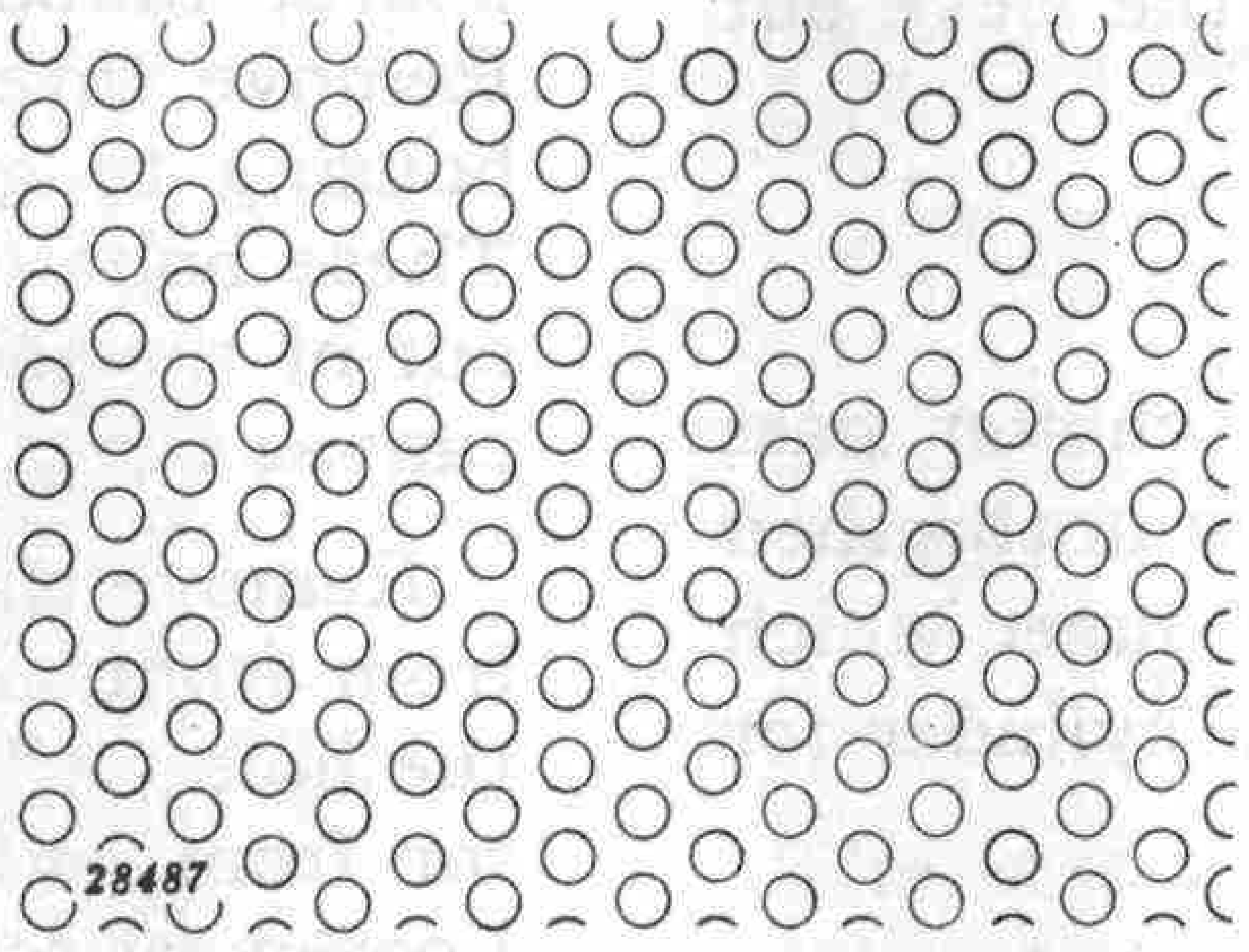
Portions of the special sieves available are illustrated below and on the next page to show the type of hole in the various sieves. The crops for which each sieve is most often used are listed. These special sieves bolt directly through the frame and sieve rest. Remove bracket attaching adjustable sieve.



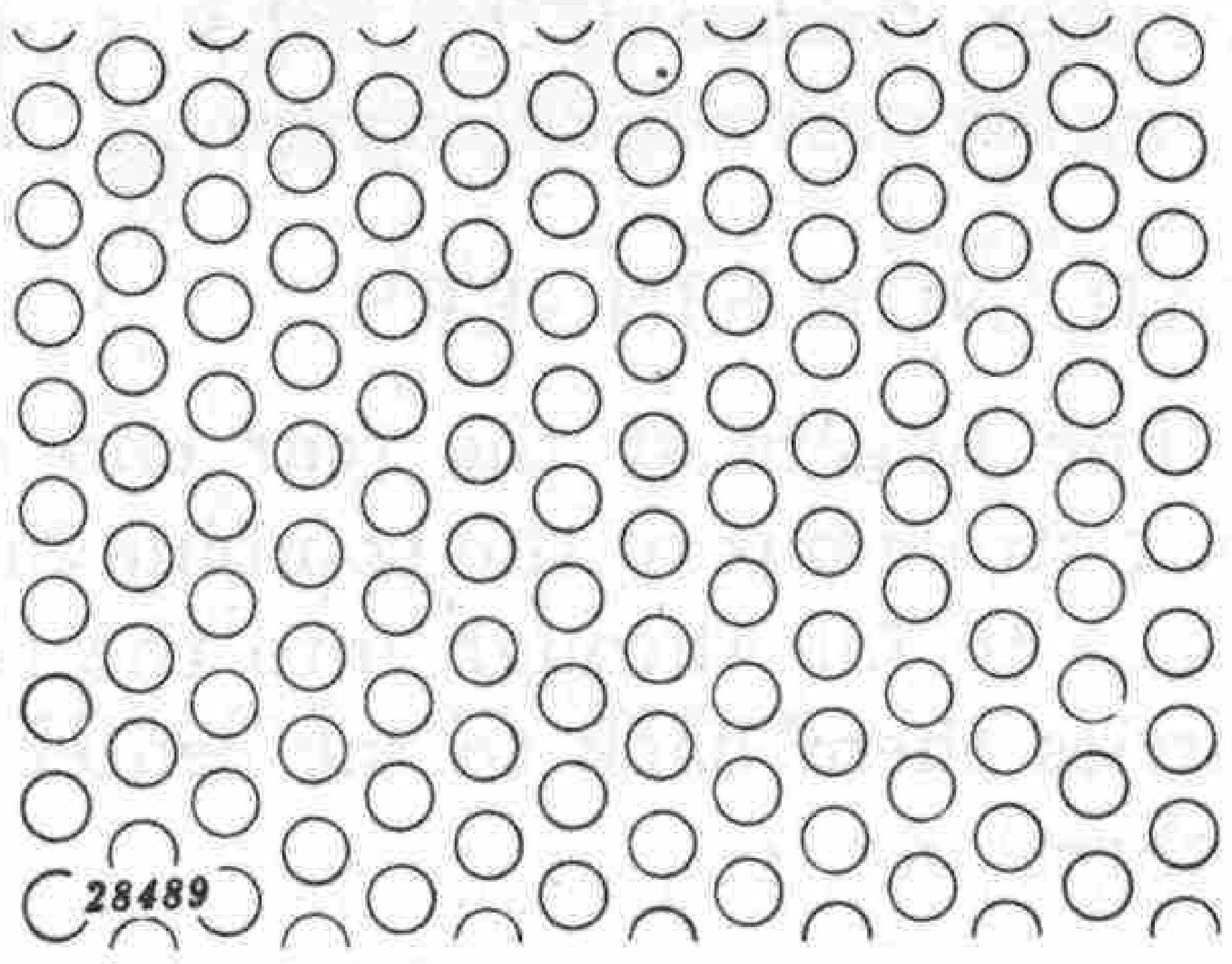
Special Sieve



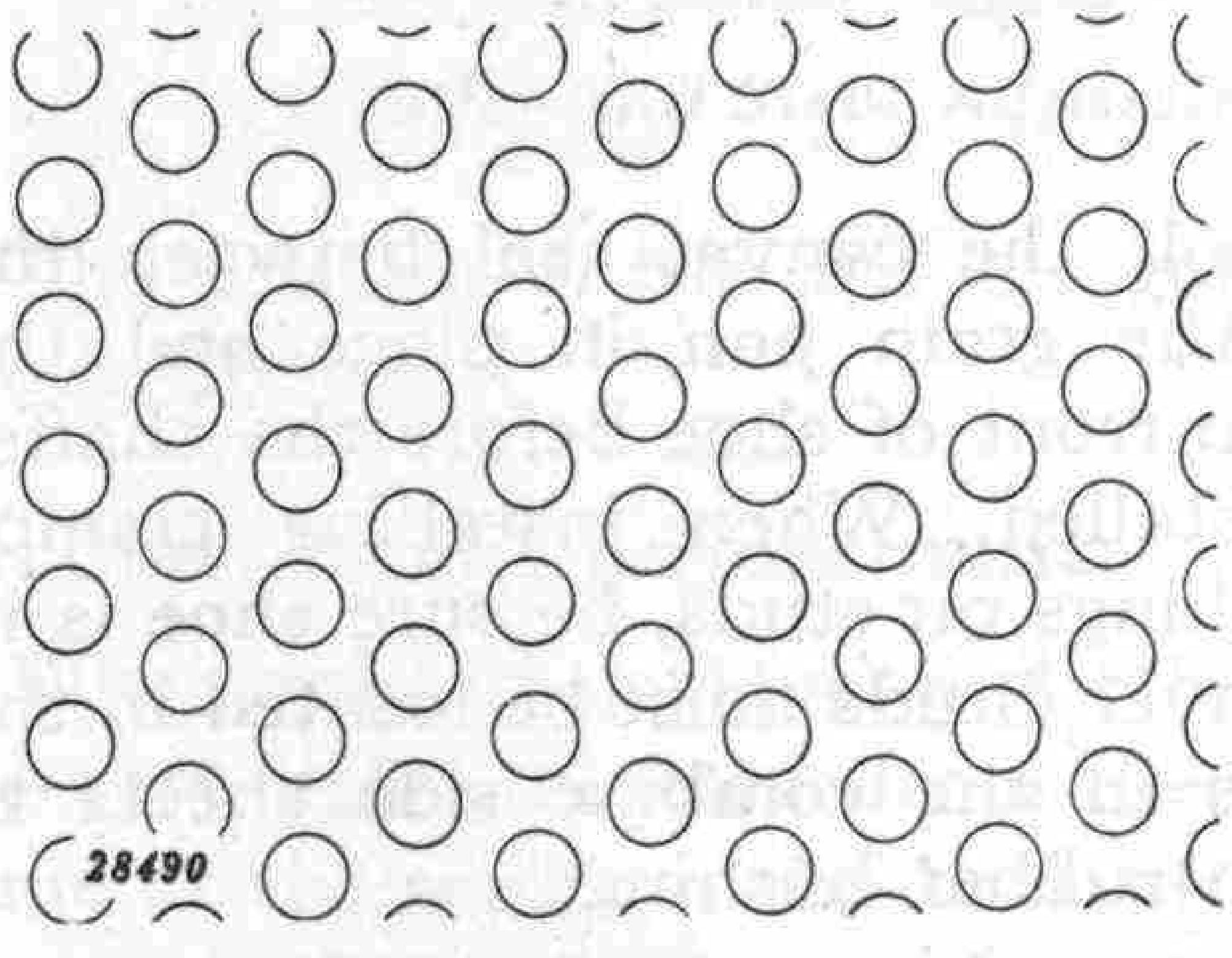
AP21451H—1/16-Inch Round Hole White Dutch Clover



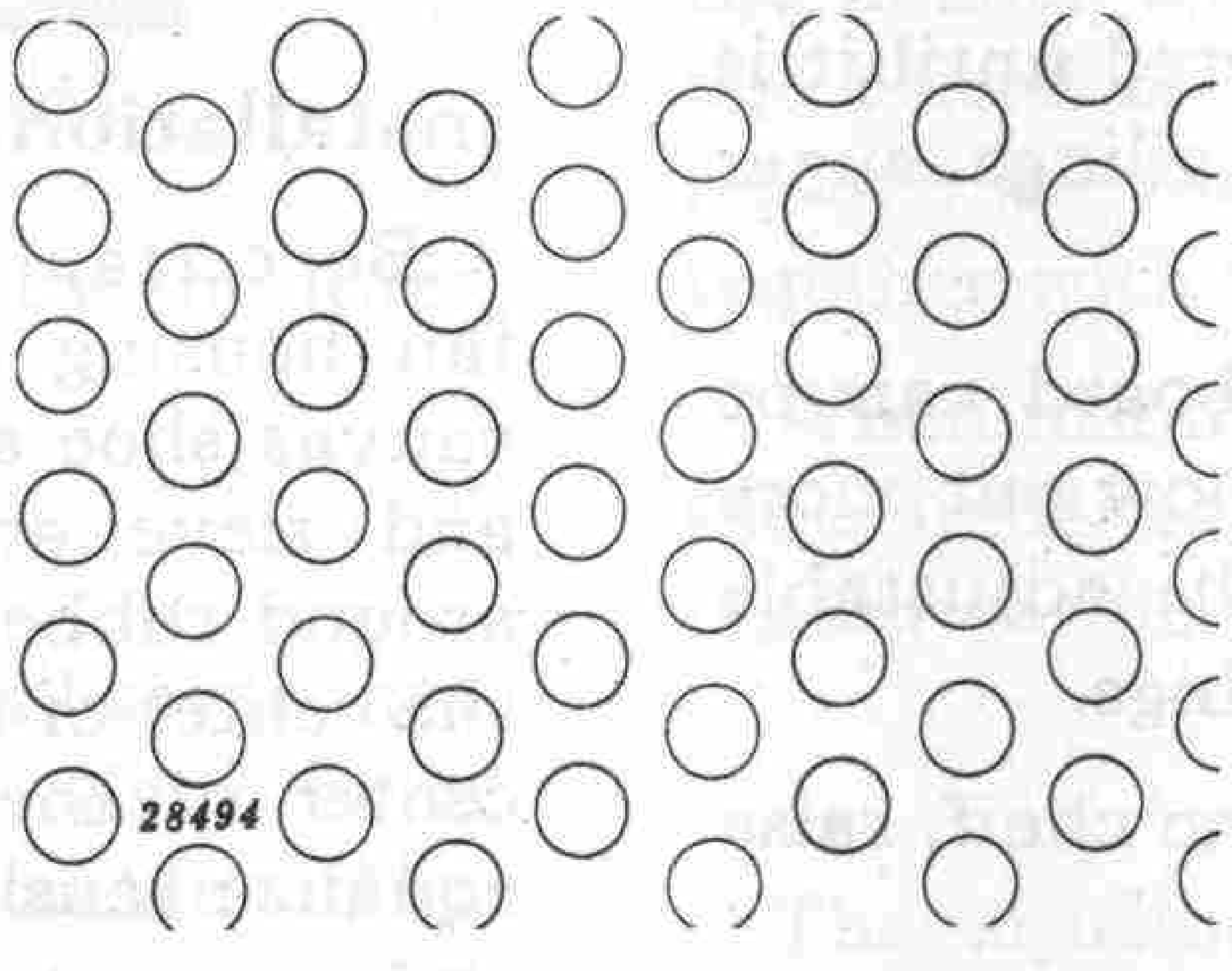
AP21455H—1/12-Inch Round Hole Timothy



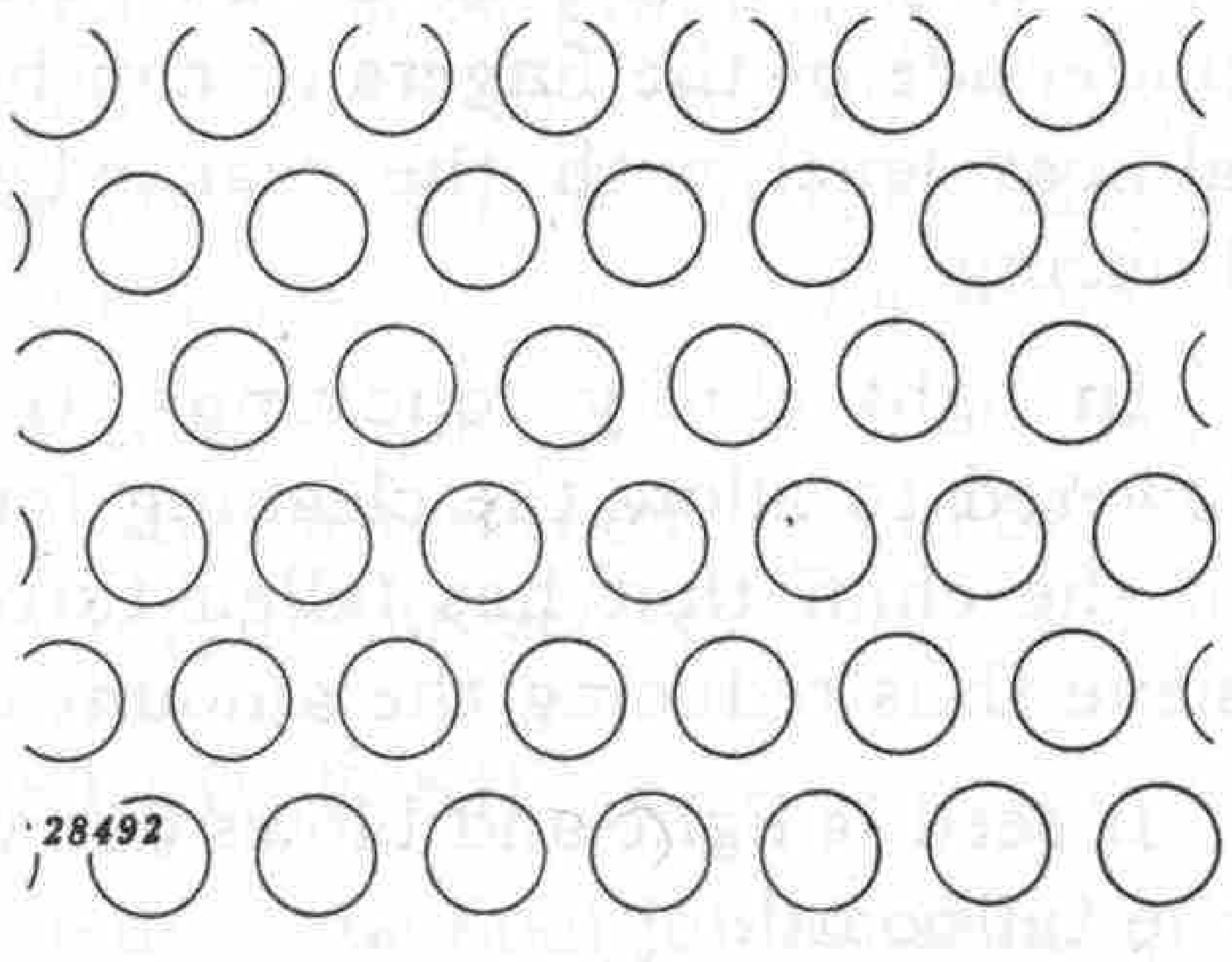
AP21457H—1/10-Inch Round Hole Clover and Alfalfa



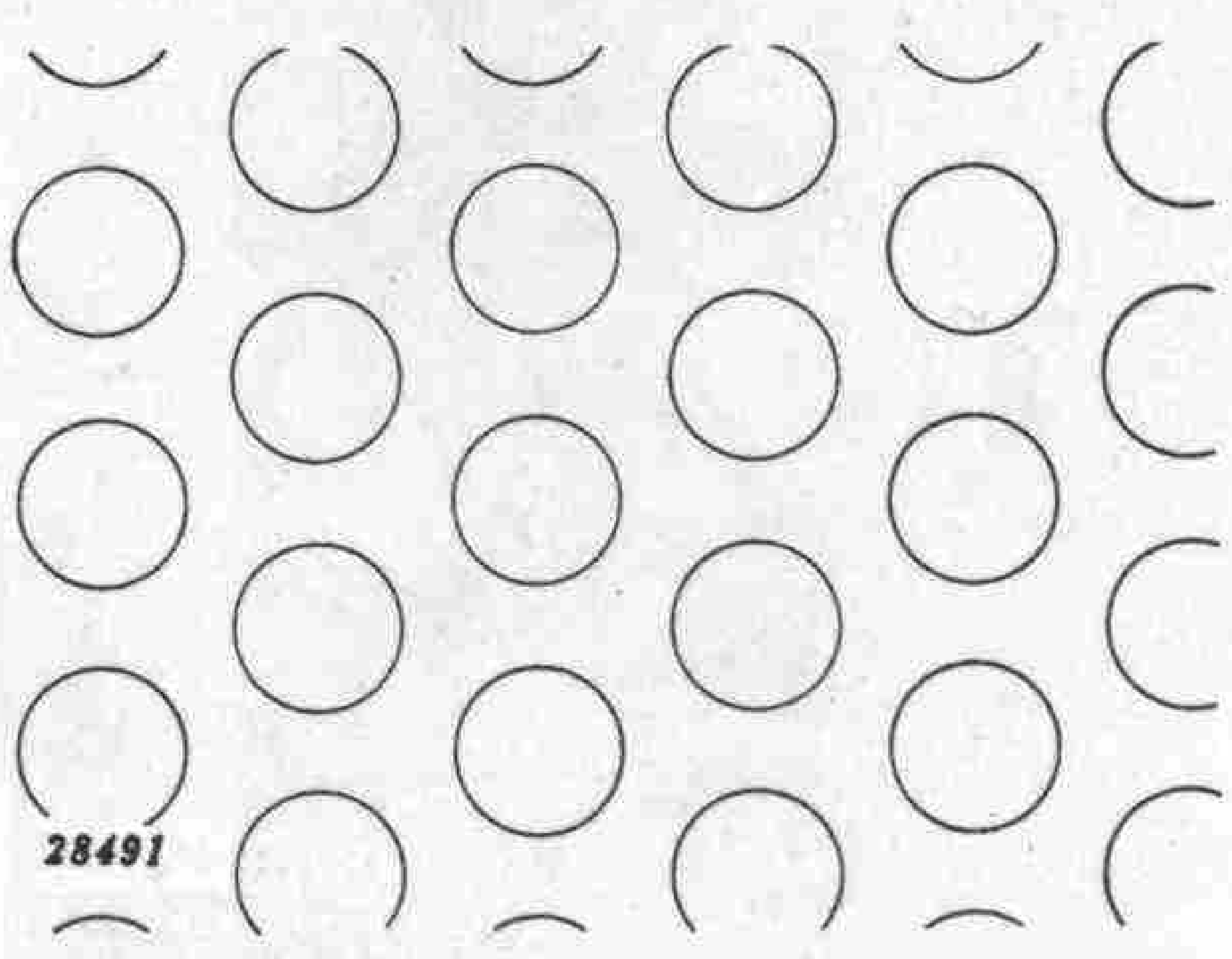
AP21450H—9/64-Inch Round Hole Lespedeza



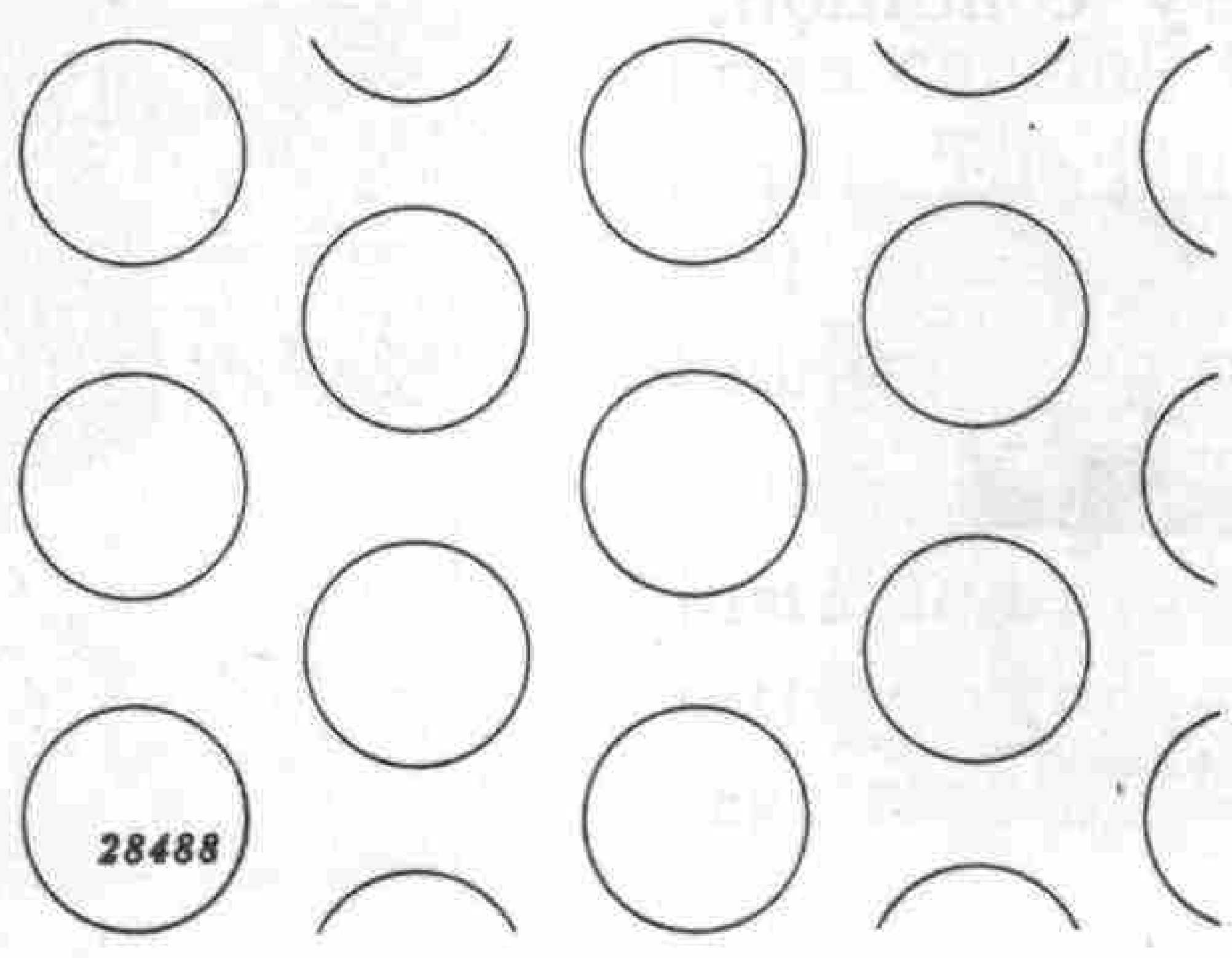
AP21452H—5/32-Inch Round Hole Flax



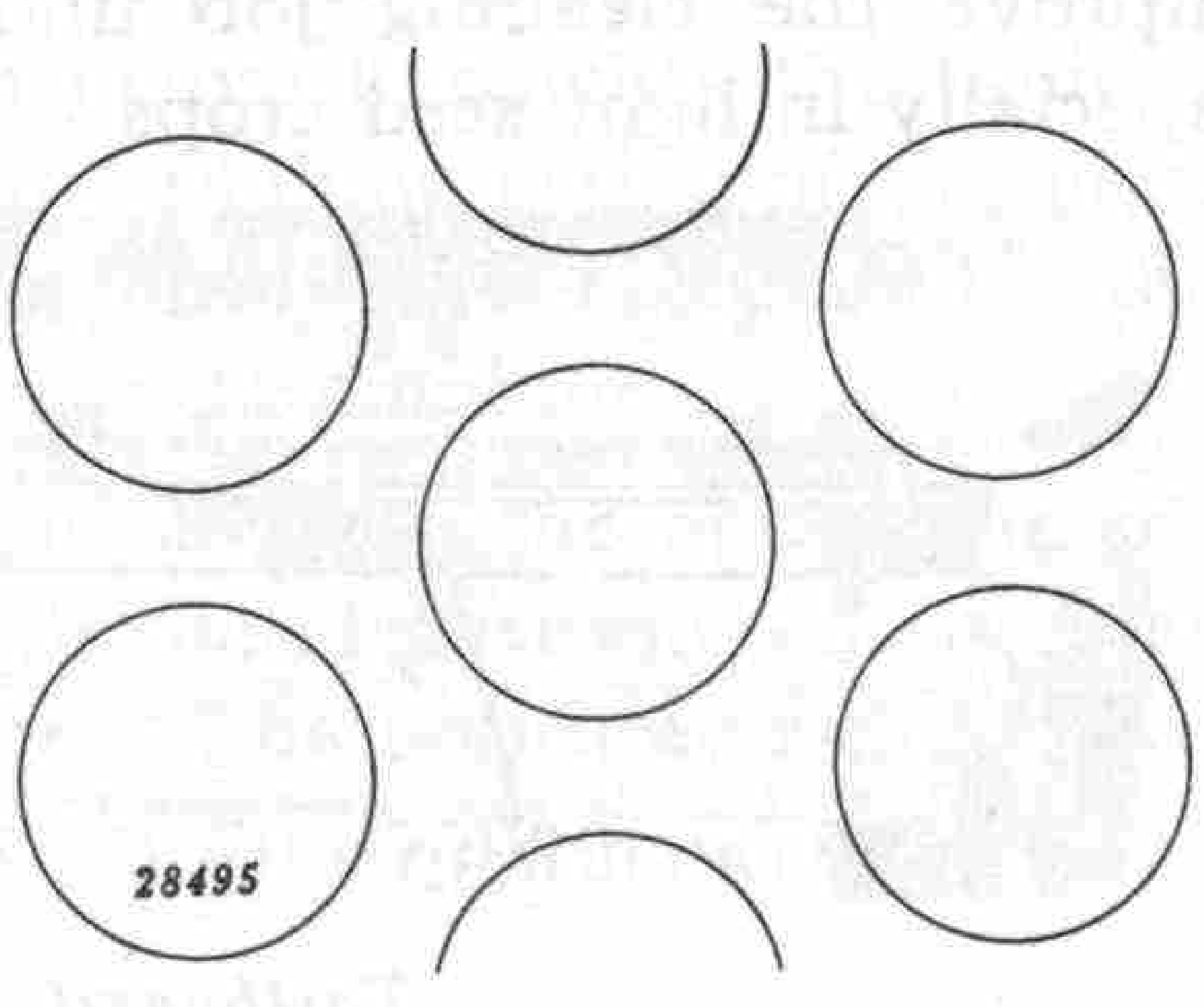
AP21456H—13/64-Inch Round Hole Flax



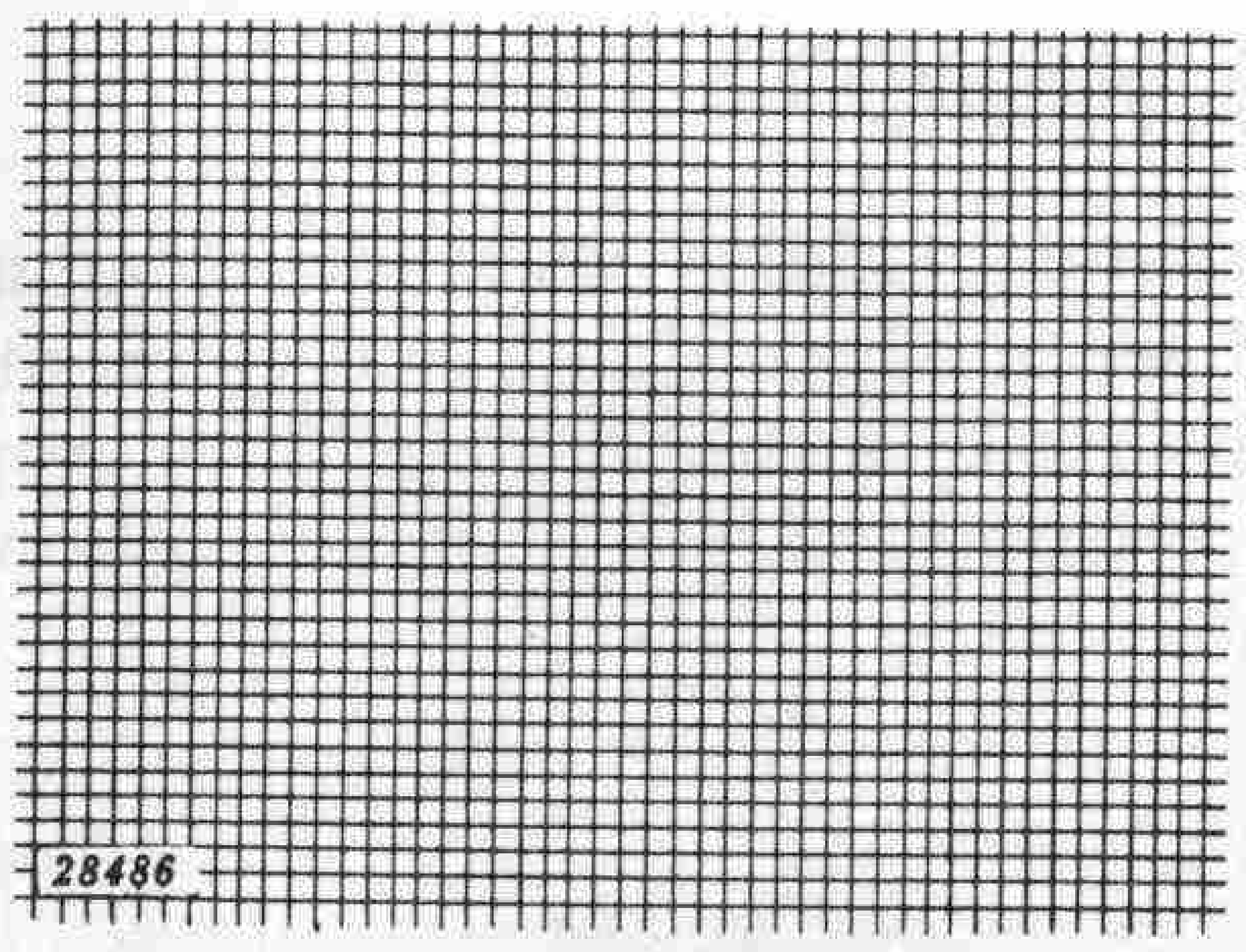
AP21447H—9/32-Inch Round Hole Wheat and Milo Maize



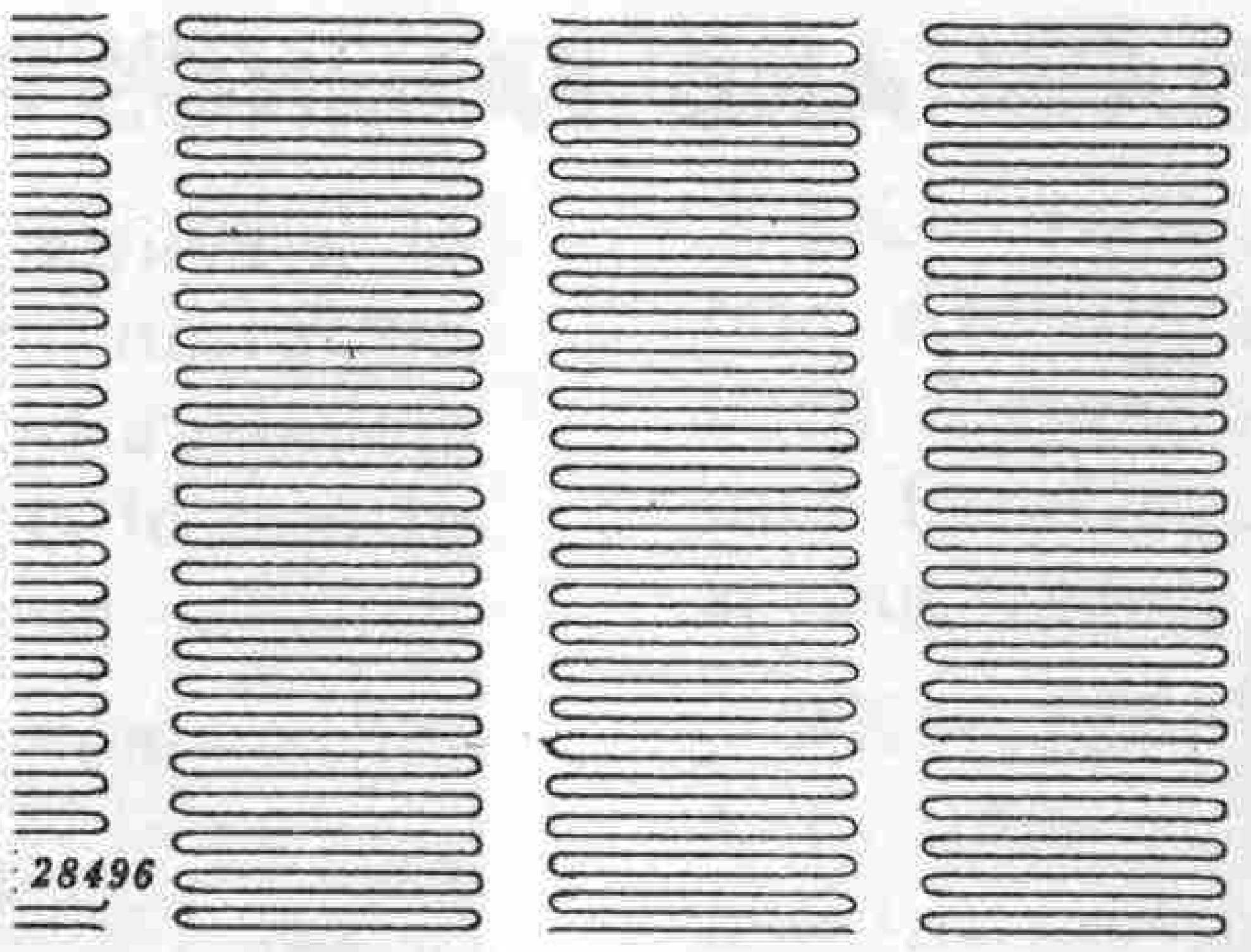
AP21453H—3/8-Inch Round Hole Soybeans



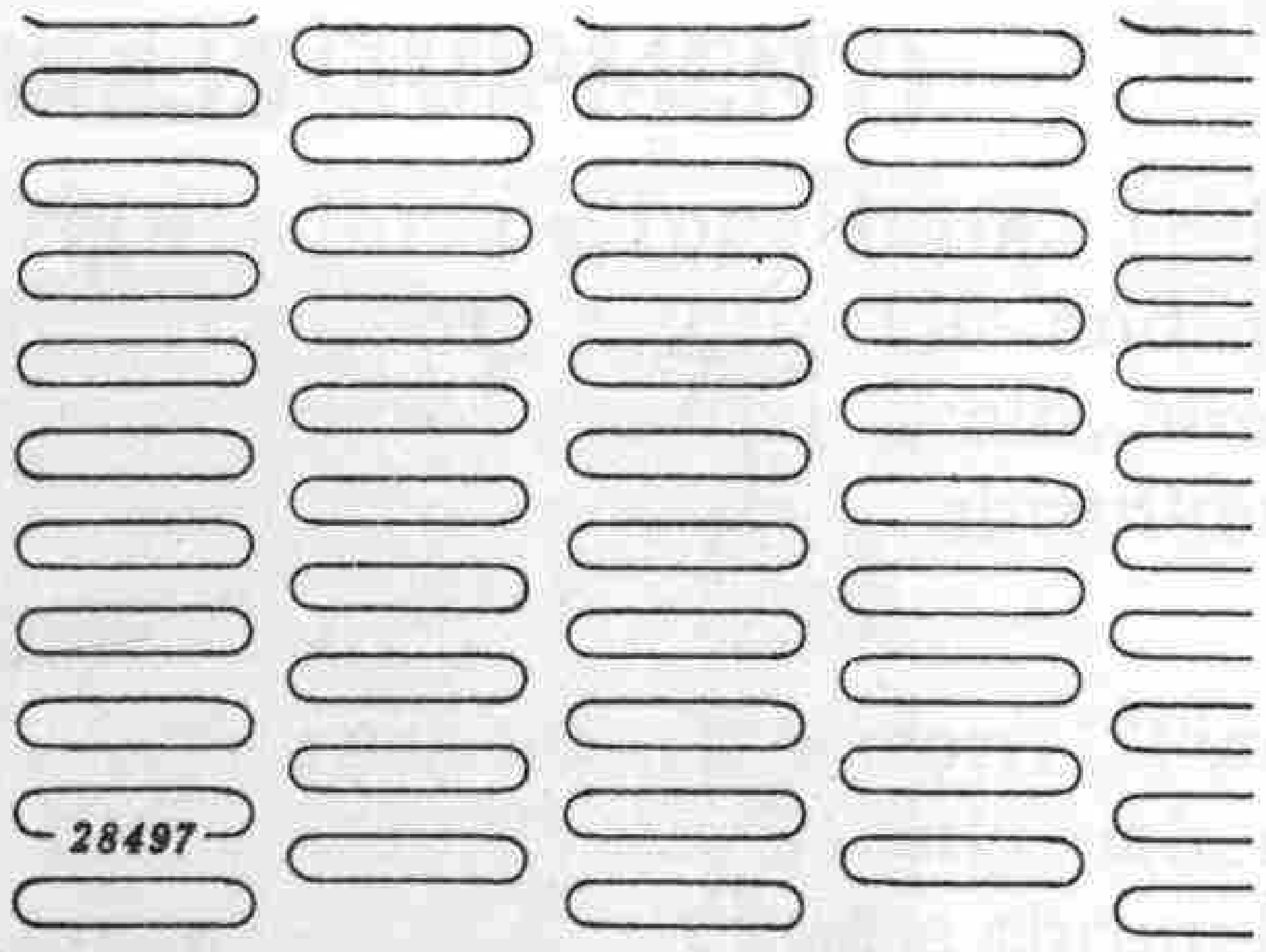
AP21454H—9/16-Inch Round Hole Navy Beans



AP12707H—24 x 24 Mesh Screen Red Top Clover



AP21449H—1/32 x 1/2-Inch Slotted Hole—Red Top Clover



AP21448H—1/16 x 3/8-Inch Slotted Hole—Rye and Orchard Grass

NO-CHOKE CHAFFER EXTENSION.

In a crop where straw and weeds are chopped fine, the amount of tailings can be reduced by using the No-Choke Chaffer Extension in place of the finger bar. This attachment is available as Shipping Package AP13553H.

When installing the chaffer extension, the flat spacer goes between the extension and the support angle for the adjustable chaffer sieve.

WIRE MESH COVER FOR TAILINGS FINGER BAR.

When a trashy condition prevents good work and a No-Choke Chaffer Extension is not available, temporary relief can be obtained by covering the fingers with a 1/4-inch square mesh screen.

A special screen, AP14124H, can be ordered for this purpose.

STRAW DEFLECTOR.

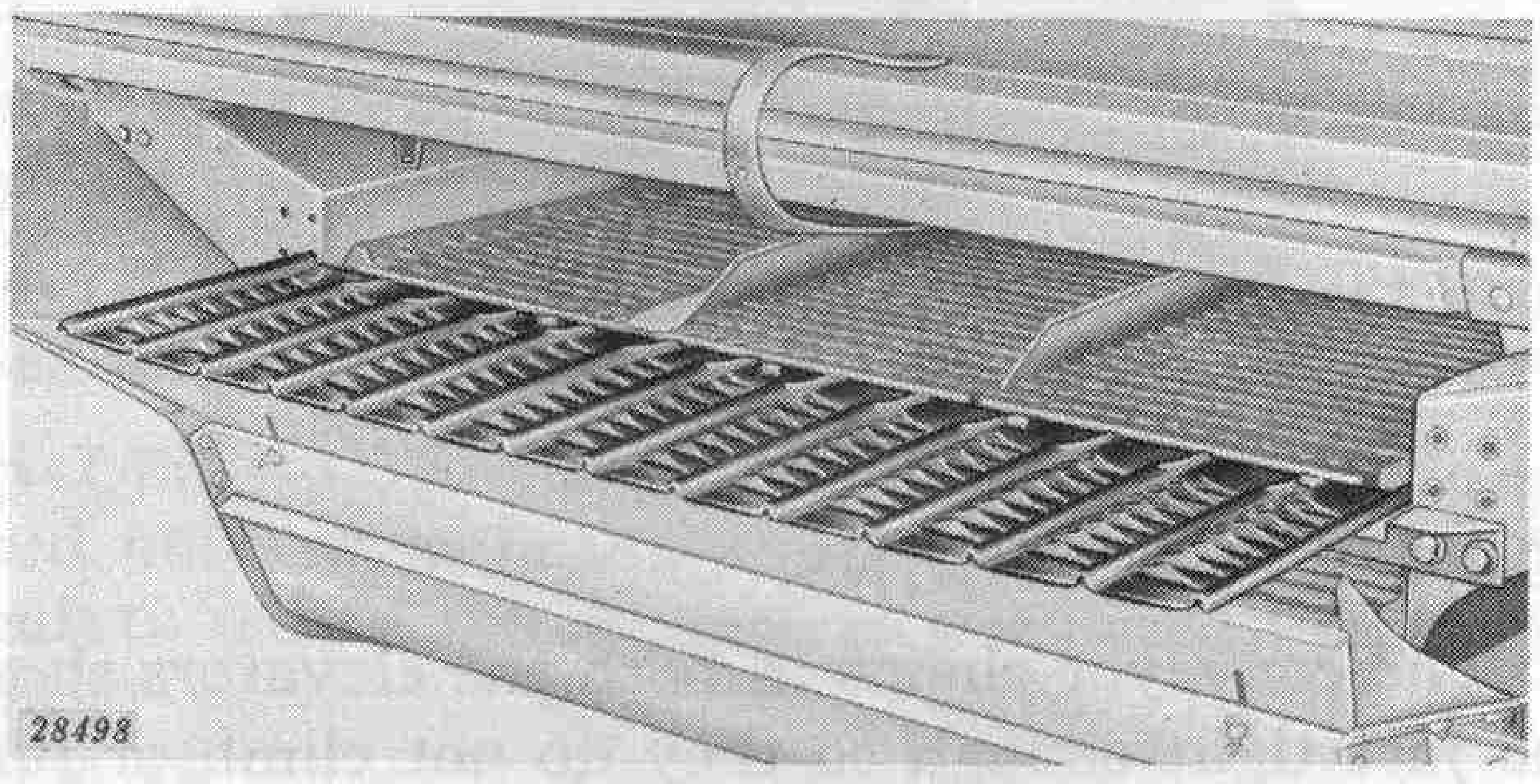
The straw deflector throws the straw to the right away from the standing grain so a cleaner swath can be cut. It is especially useful when working in a strong wind to keep the straw from blowing into the unharvested grain.

Order: AP 22040 H Long Straw Deflector or
P 31765 H—Short Straw Deflector

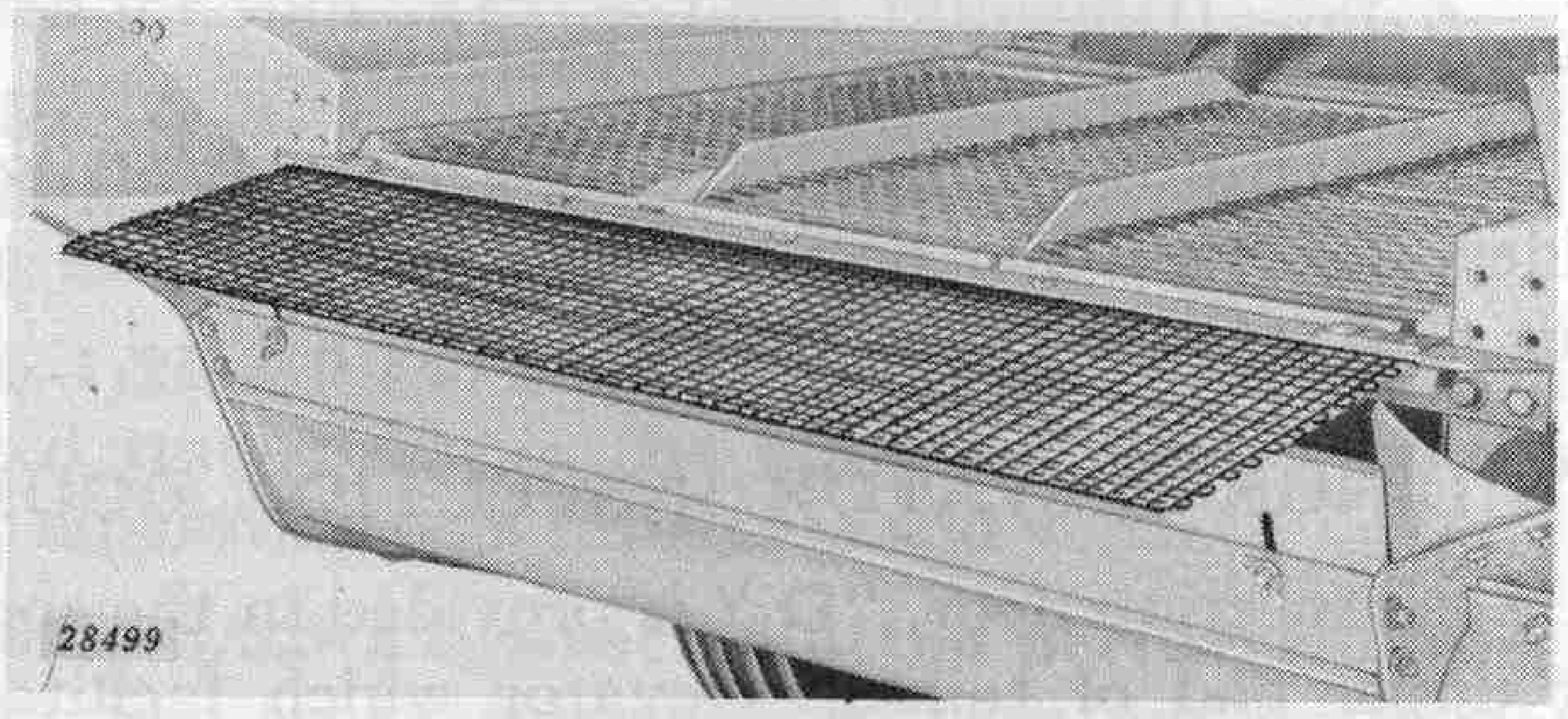
TAILINGS AGITATOR.

This tailings agitator is particularly useful when the combine is operated on hillsides in damp crop conditions, as it keeps the chaff and grain from bridging across the space between the end of the shoe and the seals at the ends of the tailgate.

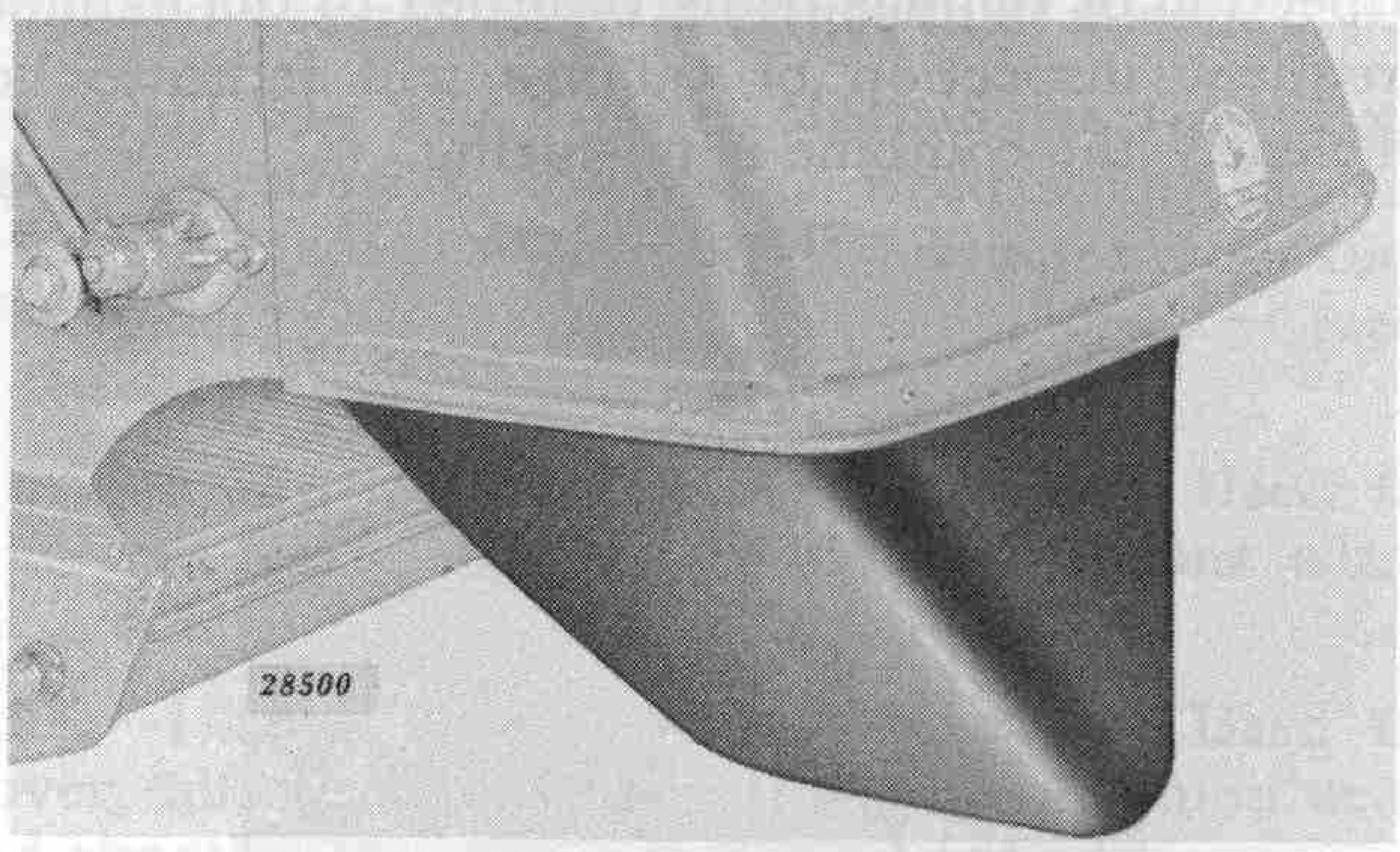
Order from your John Deere dealer: Shipping Package—BH10328H



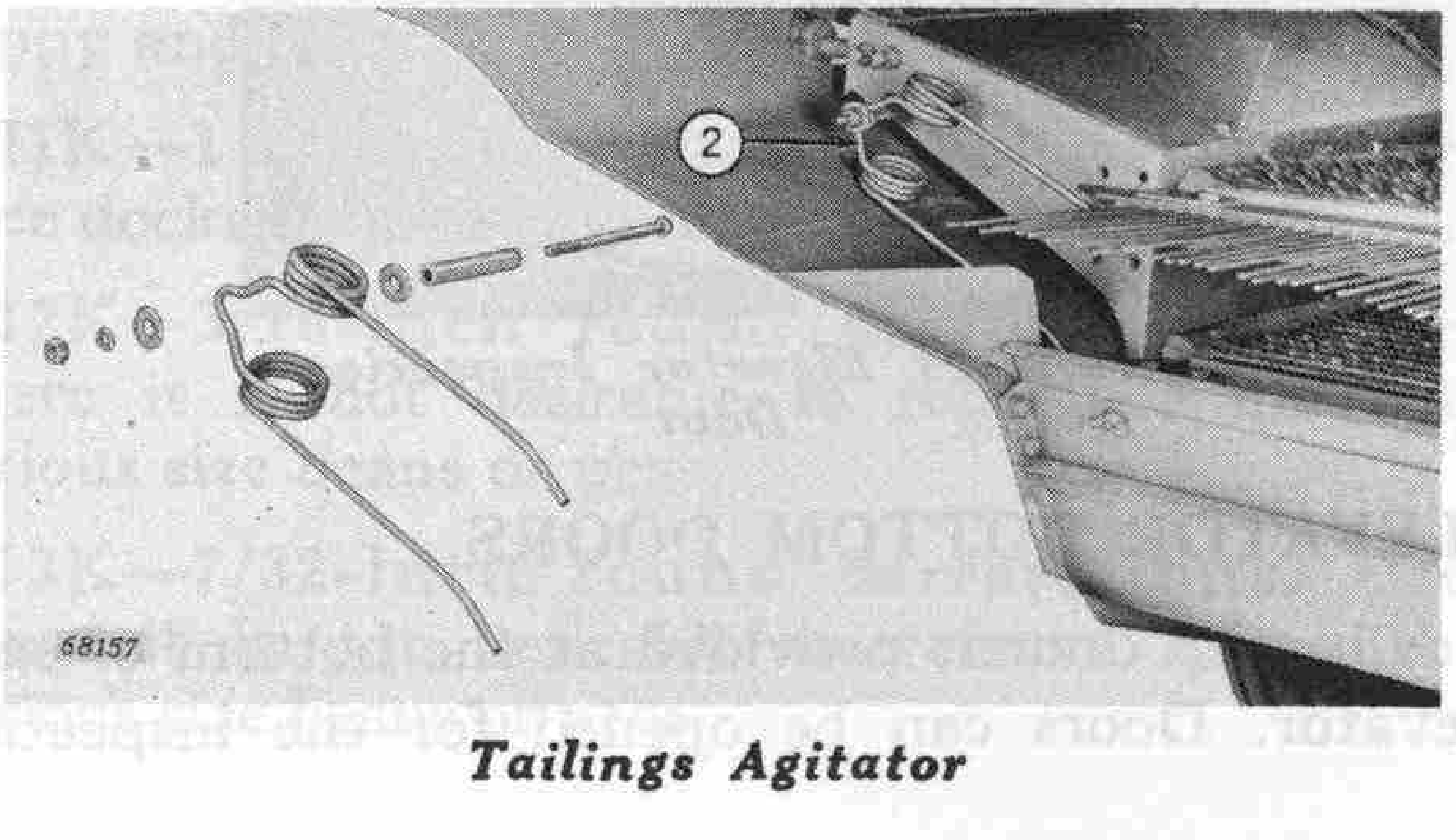
No-Choke Chaffer Extension



Wire Mesh Cover

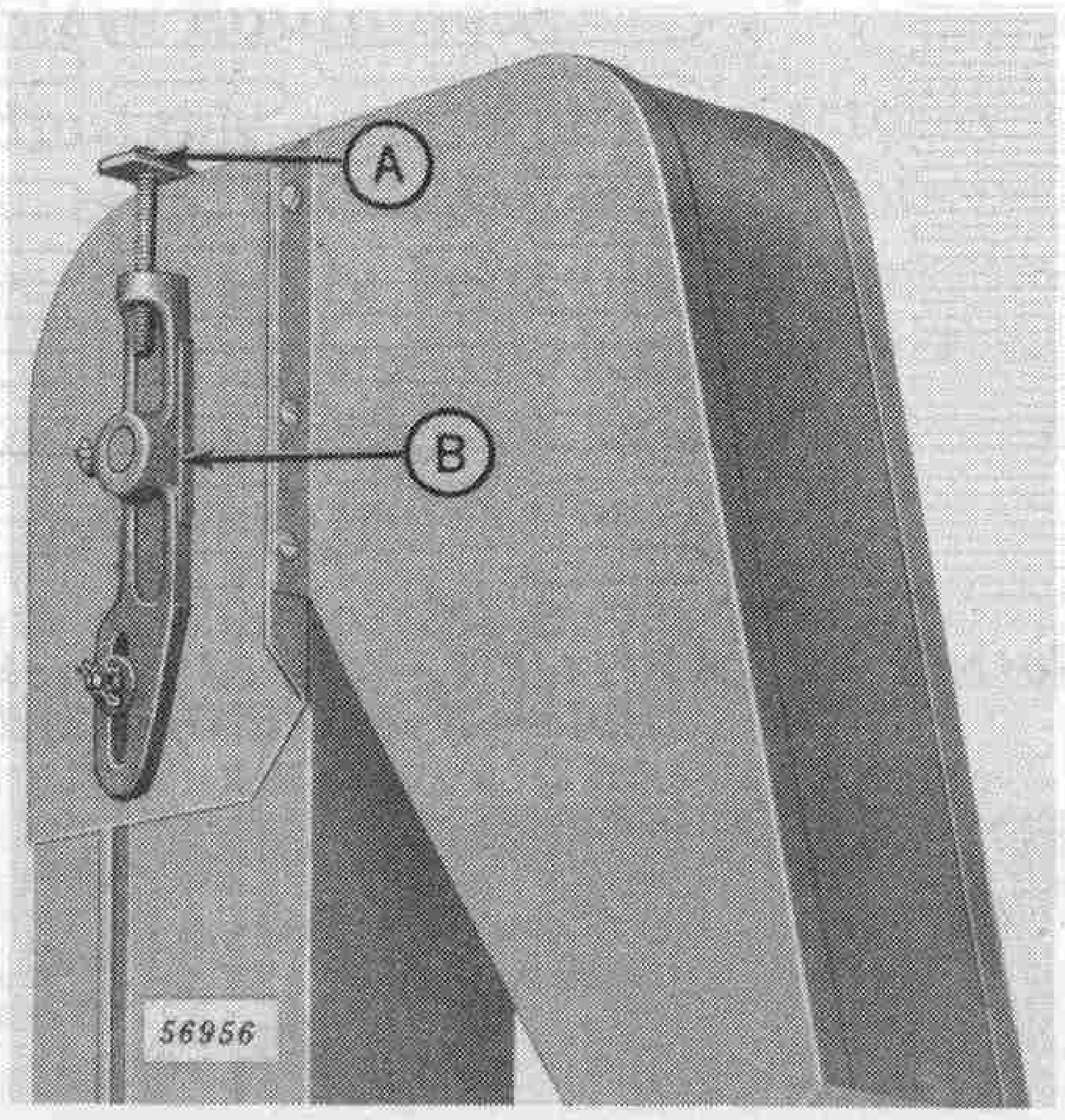


Long Straw Deflector



Tailings Agitator

CLEAN GRAIN AND TAILINGS ELEVATORS



Elevator Conveyor Chain Adjustment

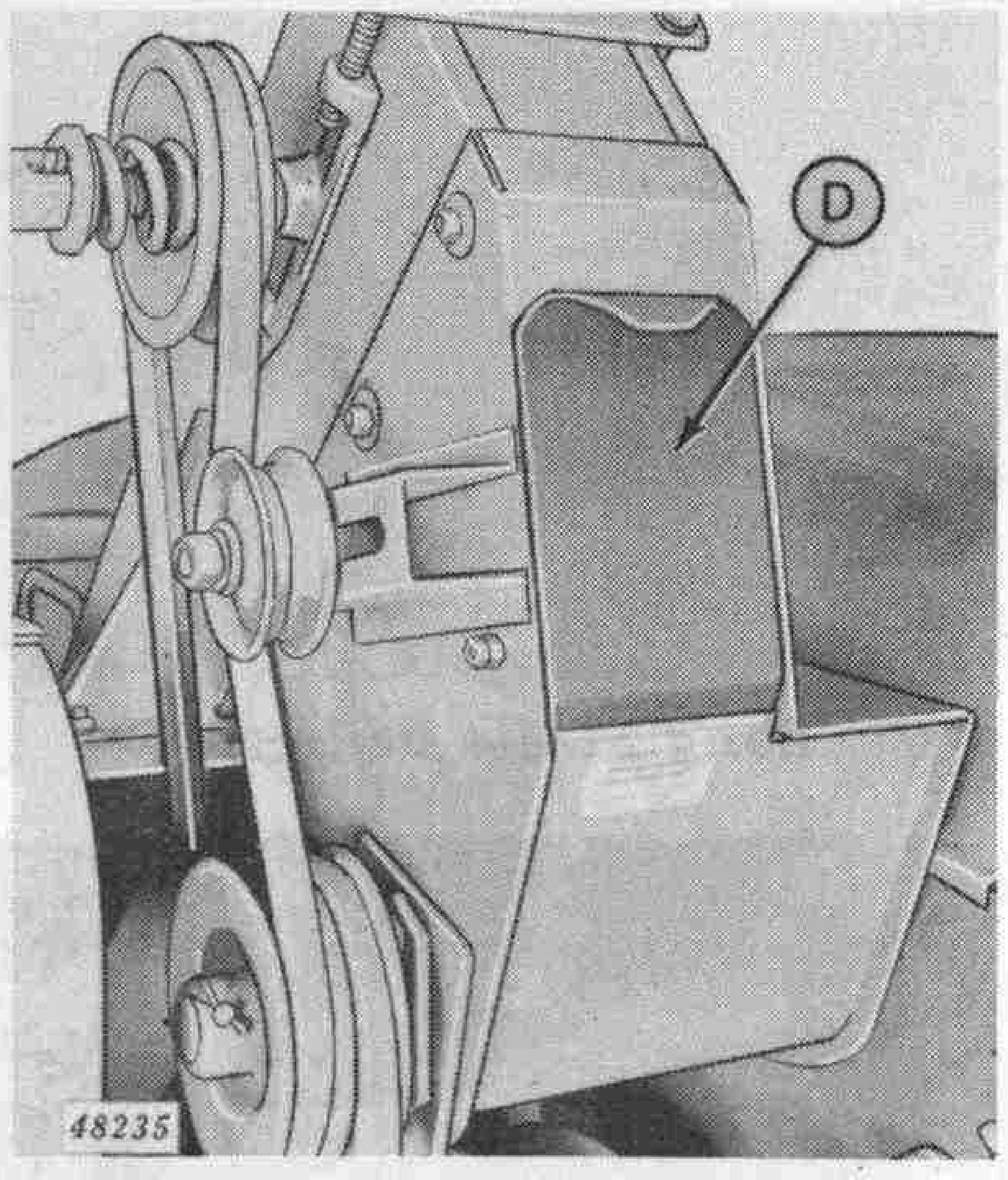
CONVEYOR CHAINS.

The conveyor chains in both the elevators should be just tight enough so they do not climb or jump sprockets. Check after the first day of operation and every three days of operation thereafter.

Adjustment. Screw adjusting bolts "A," both sides, into tightener brackets "B," to **increase** and out to **decrease** chain tension.

TAILINGS ELEVATOR INSPECTION DOOR.

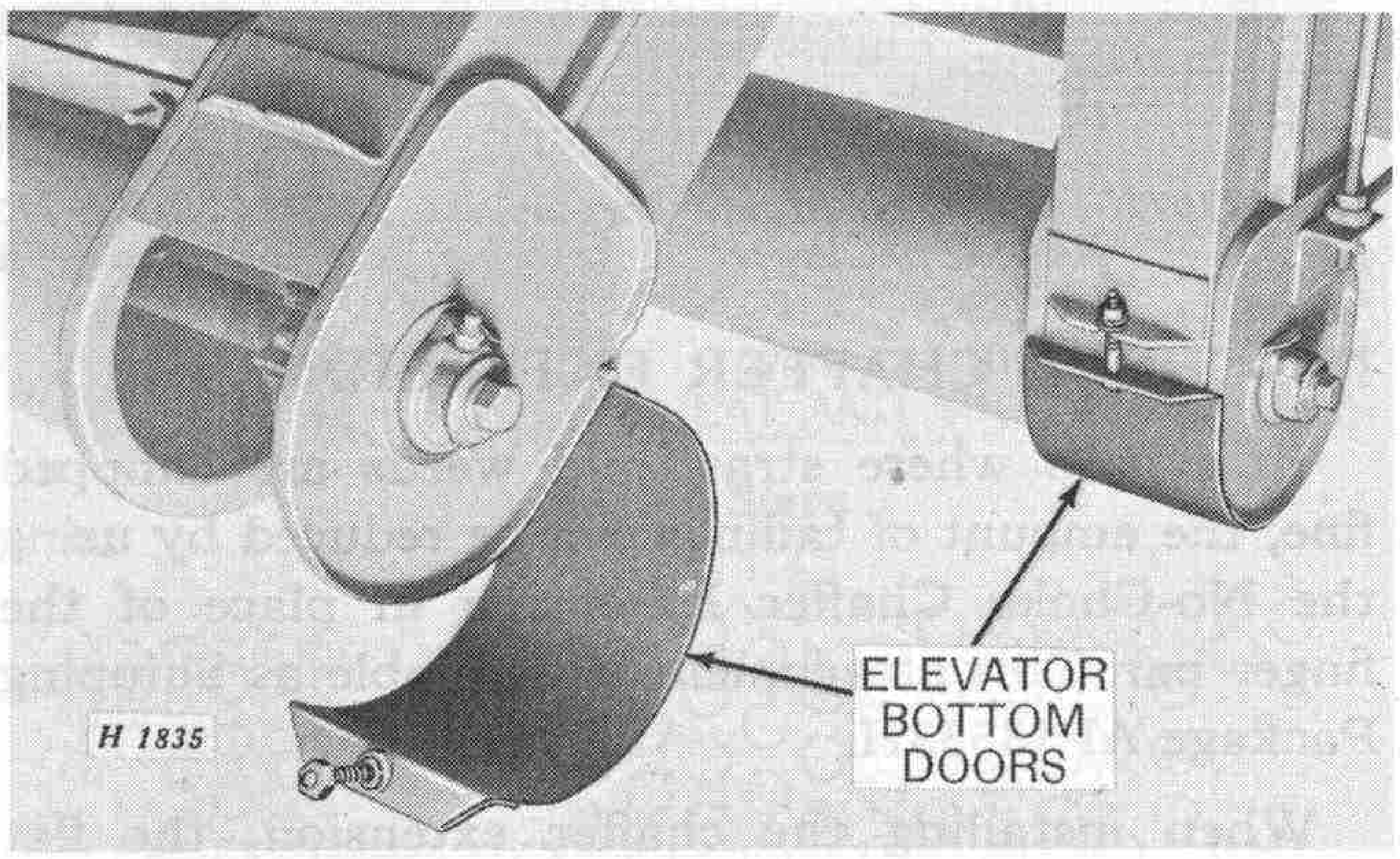
An inspection door, "D," is provided in the spout at upper end of tailings elevator which facilitates inspection of tailings being returned to the cylinder. Frequent inspection of tailings will indicate how efficiently the combine is operating.



Tailings Elevator Inspection Door

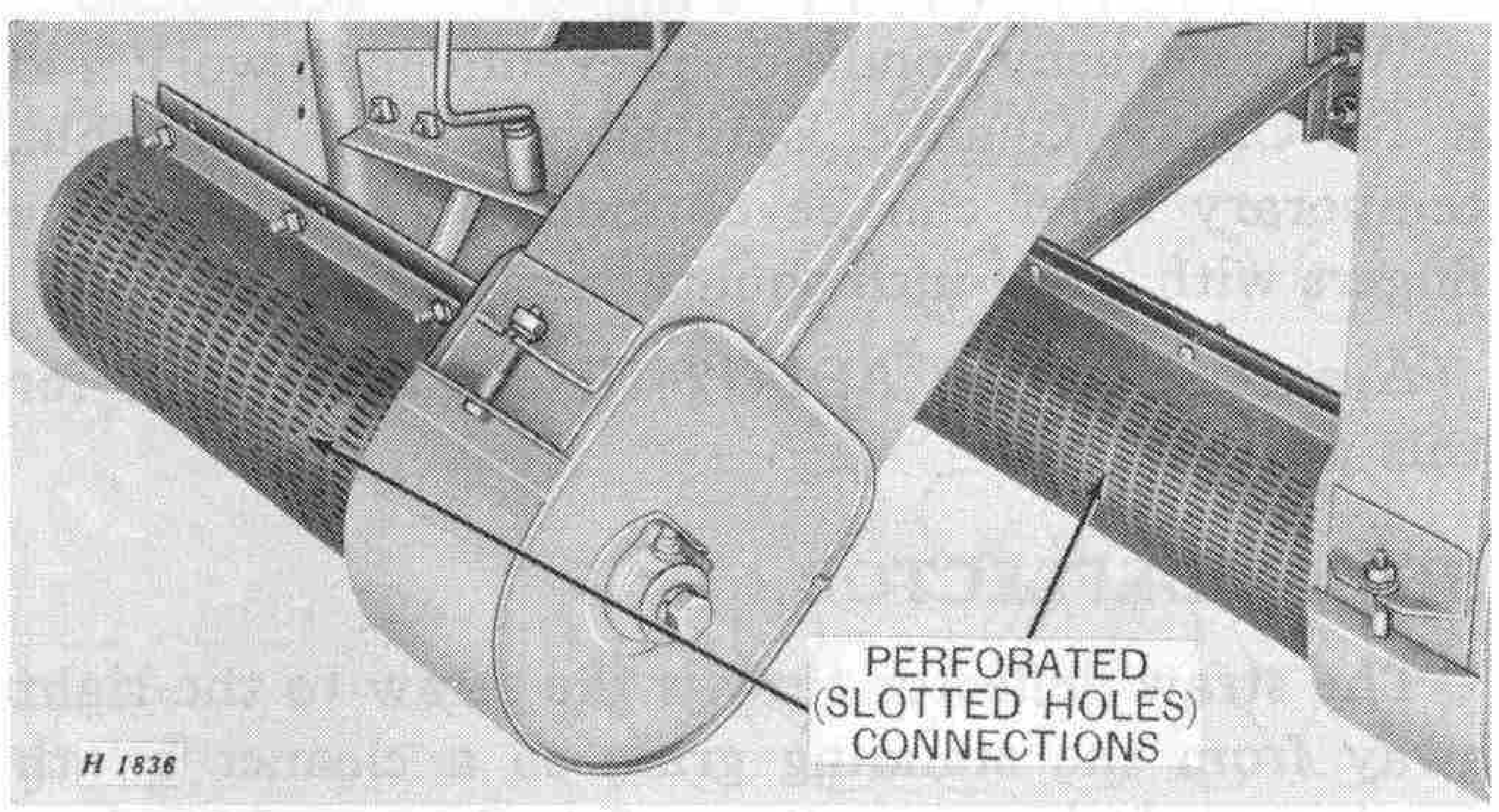
ELEVATOR BOTTOM DOORS.

A hinged door is provided at the bottom of each elevator. Doors can be opened for the inspection of elevator chains and paddles and for cleaning out grain and weed seeds. Open doors and clean out elevators before moving to a different field or crop, at end of each harvest day, or when preparing combine for storage.



Elevator Bottom Doors

PERFORATED AUGER HOUSING CONNECTIONS (SPECIAL EQUIPMENT)

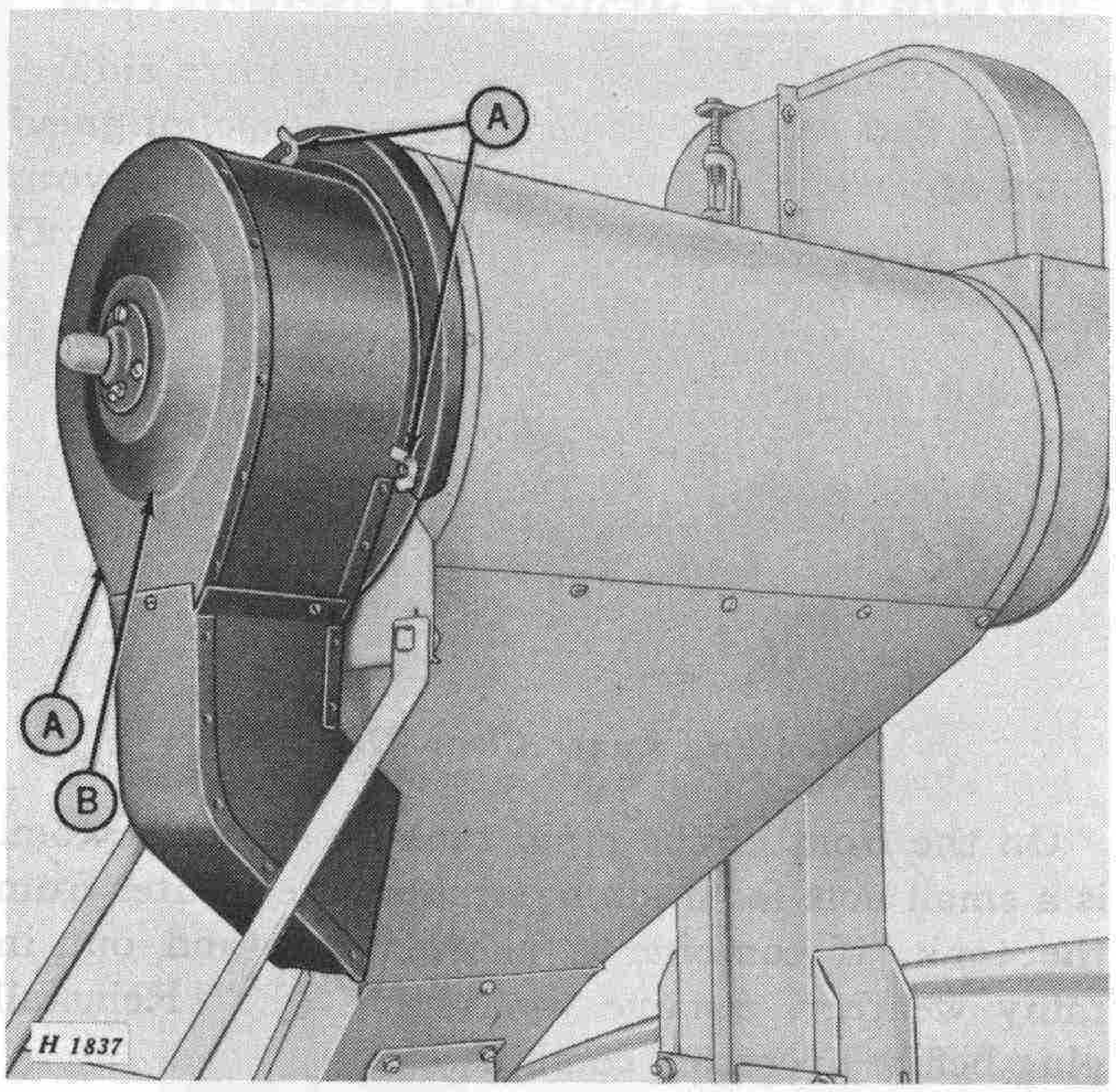


Perforated Auger Housing Connections

Auger connections with slotted perforations may be obtained that will permit dirt and small chaff to be separated from grain by dropping through the perforations. Order:

P 30313 H	1/16″ x 1″	Slotted Hole Connection—Tailings (Small Grain)
P 30344 H	1/16″ x 1″	Slotted Hole Connection—Clean Grain (Small Grain)
P 30314 H	3/32″ x 3/4″	Slotted Hole Connection—Tailings (Soybeans)
P 30345 H	3/32″ x 3/4″	Slotted Hole Connection—Clean Grain (Soybeans)
P 30315 H	5/32″ x 3/4″	Slotted Hole Connection—Tailings (Peas and Beans)
P 30346 H	5/32″ x 3/4″	Slotted Hole Connection—Clean Grain (Peas and Beans)

HART SCOURKLEEN WEED SEED CLEANER (SPECIAL EQUIPMENT)



The Hart ScourKleen is available for both grain tank and sacker combines for use in conditions where weed seeds in grain present a cleaning problem.

Order from your John Deere dealer: BH10368H (for Grain Tank Combine) or BH10369H (for Sacker Combine).

Screens may be quickly interchanged for various crops by removing the three wing nuts, "A," and discharge end cover, "B."

Where the dockage is larger than the crop seed, the triangular or slotted type screen can be used in reverse action for harvesting flax or other small seed crops. With this method, the cleaned seed comes out of the weed seed spout.

The proper type and size of screen is very important to obtain the full efficiency of the ScourKleen. The wide variety of screens available are as follows:

1K Standard Screen (shipped in cleaner) has .165-inch triangular perforations for small grains. This will reduce the dockage content of fine seeds, cracked grain, and dirt found in Durham wheat, spring wheat, oats, barley, rye, and winter wheat.

SPECIAL CROPS SCREENS AVAILABLE

OK—.171-inch triangular perforations. It is one size larger than standard 1K and is used to reduce the dockage where the dockage seeds are larger size than normal. However, more small grain will pass through it.

2K—.140-inch triangular perforations. It is one size smaller than standard screen 1K and is used for reducing small seeds, cracked grain, and dirt from small-kernelled winter wheat, shrunken spring wheat, and average rye.

3K—.125-inch triangular perforation. Two sizes smaller than standard 1K, used only when grain is exceptionally small and would pass through 2K screen.

4K—4.5/64-inch round perforations. Used to reduce dockage in flax, lespedeza, and other small seed crops. It will remove a portion of the dirt and dockage which is smaller than the crop seeds.

4-1/4K—5/64 x 1-inch slotted perforations. Used for grain, small beans, and lettuce seed.

4-1/2K—3/32- x 3/4-inch slotted perforations. Used only when beans and peas are exceptionally small to reduce the dockage of weed seeds, dirt, and splits.

4-3/4K—7/64- x 3/4-inch slotted perforations. Used for sunflower seed and Williamette vetch.

5K—1/8- x 3/4-inch slotted perforations. Considered standard size for reducing dockage in soybeans or peas.

5-1/2K—9/64- x 3/4-inch slotted perforations. Used principally in the northwest and west coast for separating oats from peas and vetch.

6K—5/32- x 3/4-inch slotted perforations. The size used when soybeans or peas are larger than usual and when dockage is larger than normal.

7K—11/64- x 3/4-inch slotted perforations. Used for reducing dockage of weed seeds, cracked beans or peas, and dirt from bean and pea crop. Used where there is a considerable amount of large seeds in the crops—such as morning-glory, etc.

8K—5/32-inch round perforations. Used for cane and other seed crops, and in soybeans where there is no dockage for splits.

9K—1/20-inch round perforations. Used for clover, alfalfa, carrot seed, grass seed, onion seed, and timothy.

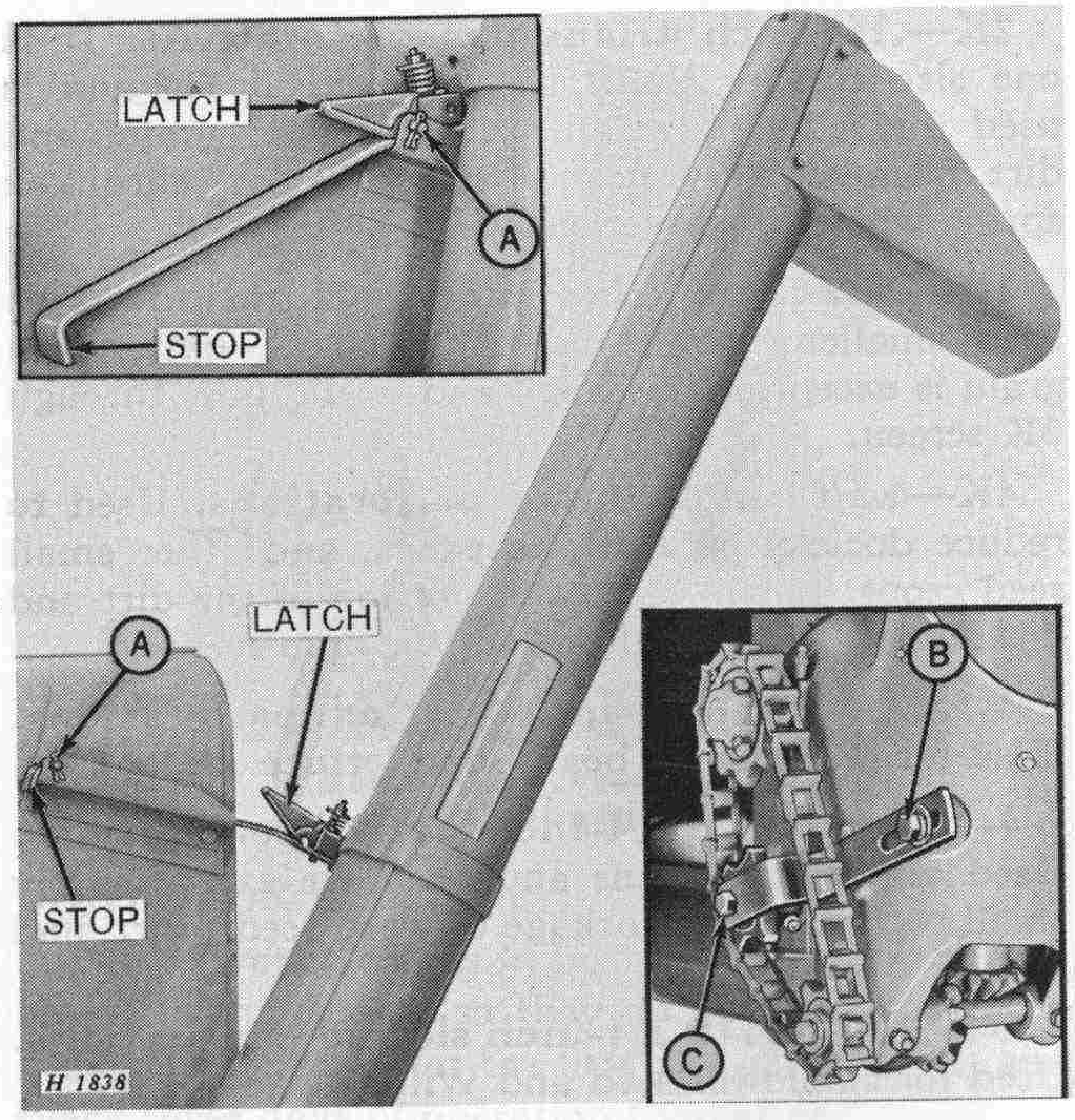
10K—1/25-inch round perforations. Used for poppy and other very fine seed crops.

11K—1/12-inch round perforations. Used to reduce dockage in flax and in some clover crops.

12K—3/16-inch round perforations. Used where it is not desirable to remove splits from various size beans or peas.

13K—7/32-inch round perforations. Used where it is not desirable to remove splits from various size beans or peas.

GRAIN TANK AND UNLOADING AUGER



Unloading Auger

The capacity of the grain tank on the John Deere 30 Combine is 25 bushels.

The grain tank is unloaded by releasing the latch, swinging the unloading auger over a wagon or truck, and engaging the unloading auger drive.

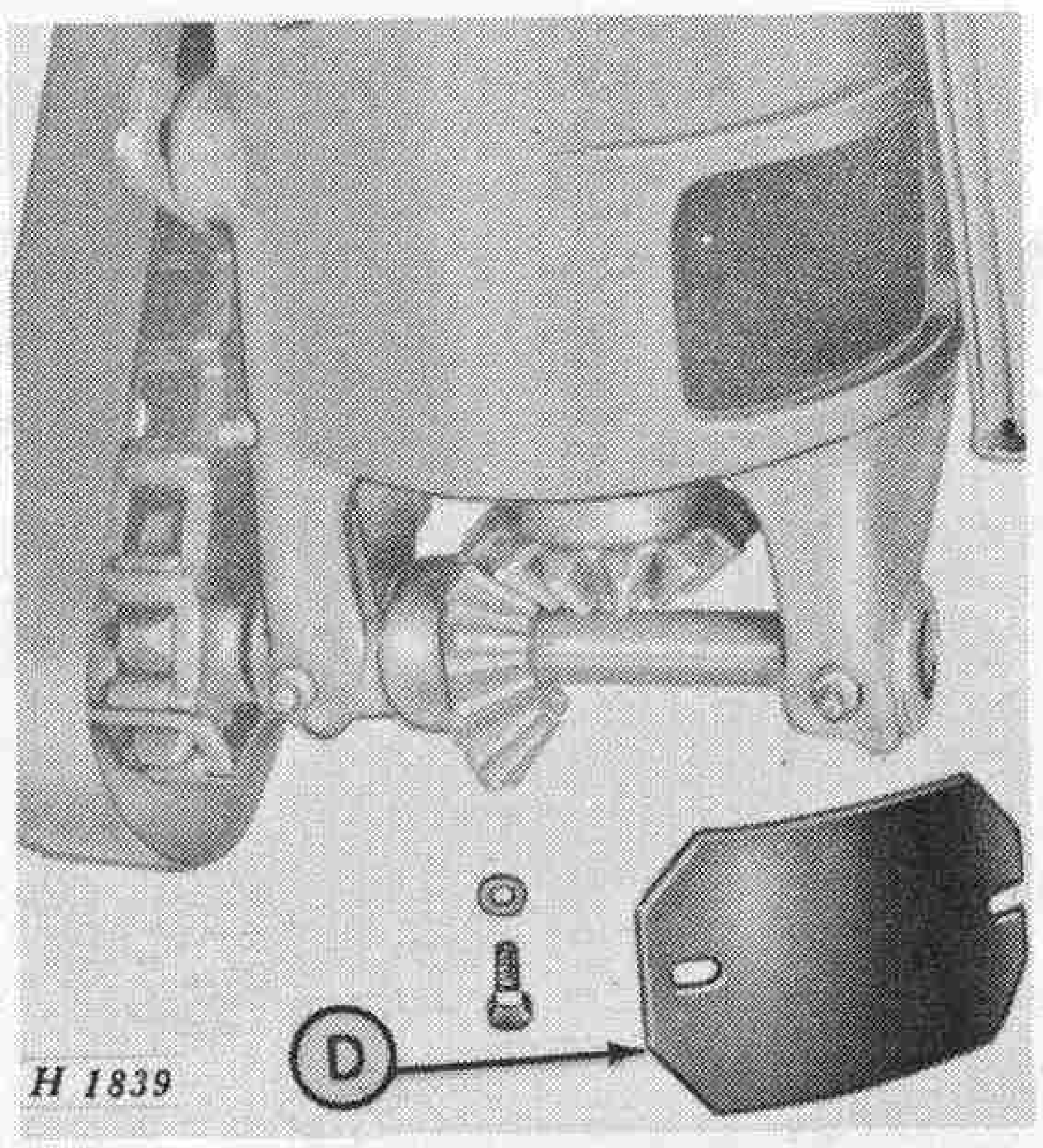
The unloading auger can be emptied by lowering the spout to ground and operating the auger. To lower spout, remove pin, "A," releasing stop.

The drive chain for grain tank vertical unloading auger should be kept tight enough so links do not climb sprocket teeth.

Adjust by loosening cap screw, "B," and moving tightener arm with sprocket, "C," in or out to increase or decrease chain tension. Retighten cap screw when desired tension has been obtained.

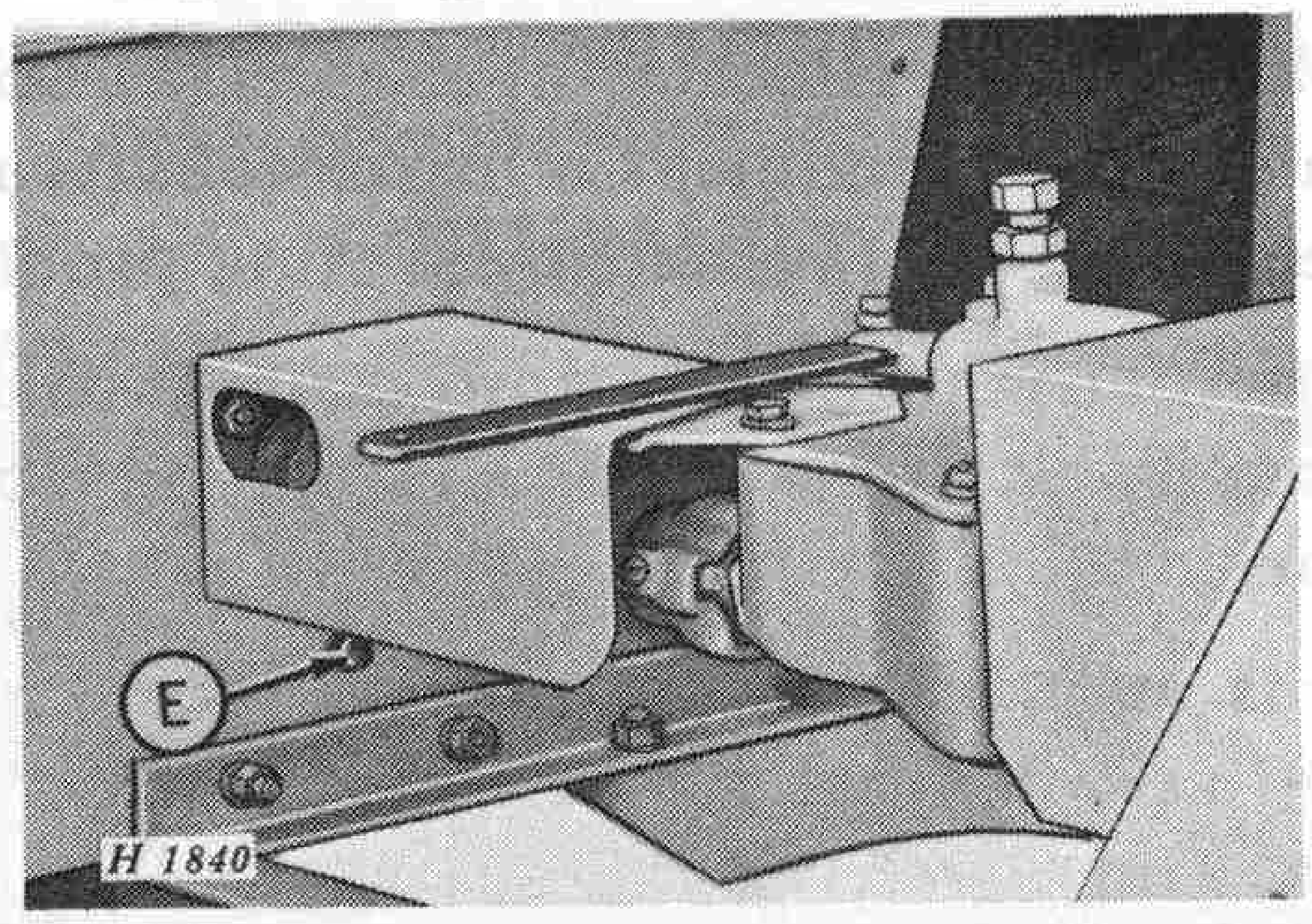
Any accumulation of material in bottom of vertical unloading auger can be removed through clean-out door, "D," in the boot casting.

To remove door, loosen cap screw securing inner end of door and remove cap screw from outer end. Door and gasket are slotted to permit freeing from inner cap screw.



Unloading Auger Clean-Out Door

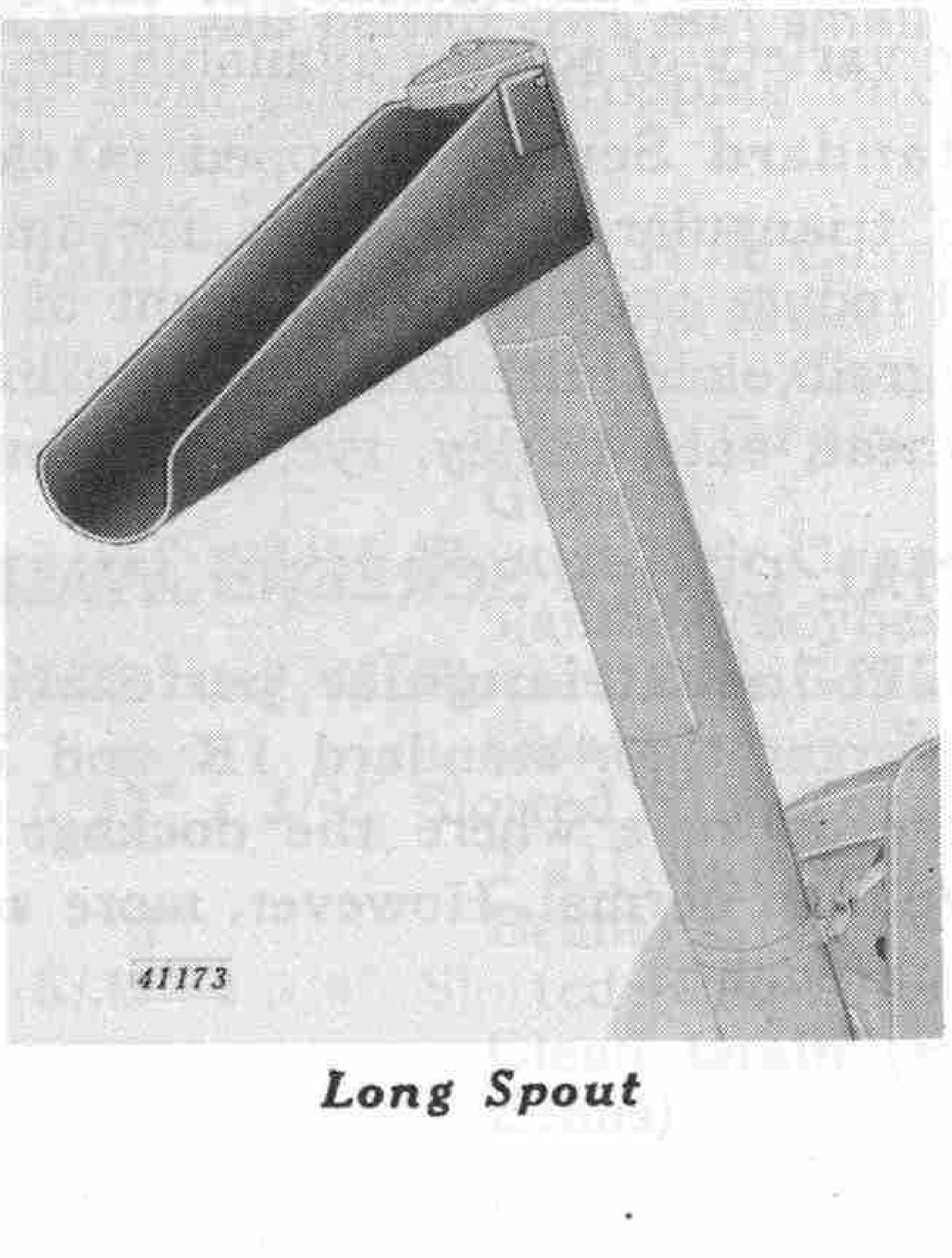
On the front of the grain tank, near the bottom, is a small hole for draining accumulated water from the tank. If combine is allowed to stand out in rainy weather, remove wood plug "E." Reinstall plug before operating combine.



Grain Tank Drain Plug

LONG SPOUT (SPECIAL EQUIPMENT)

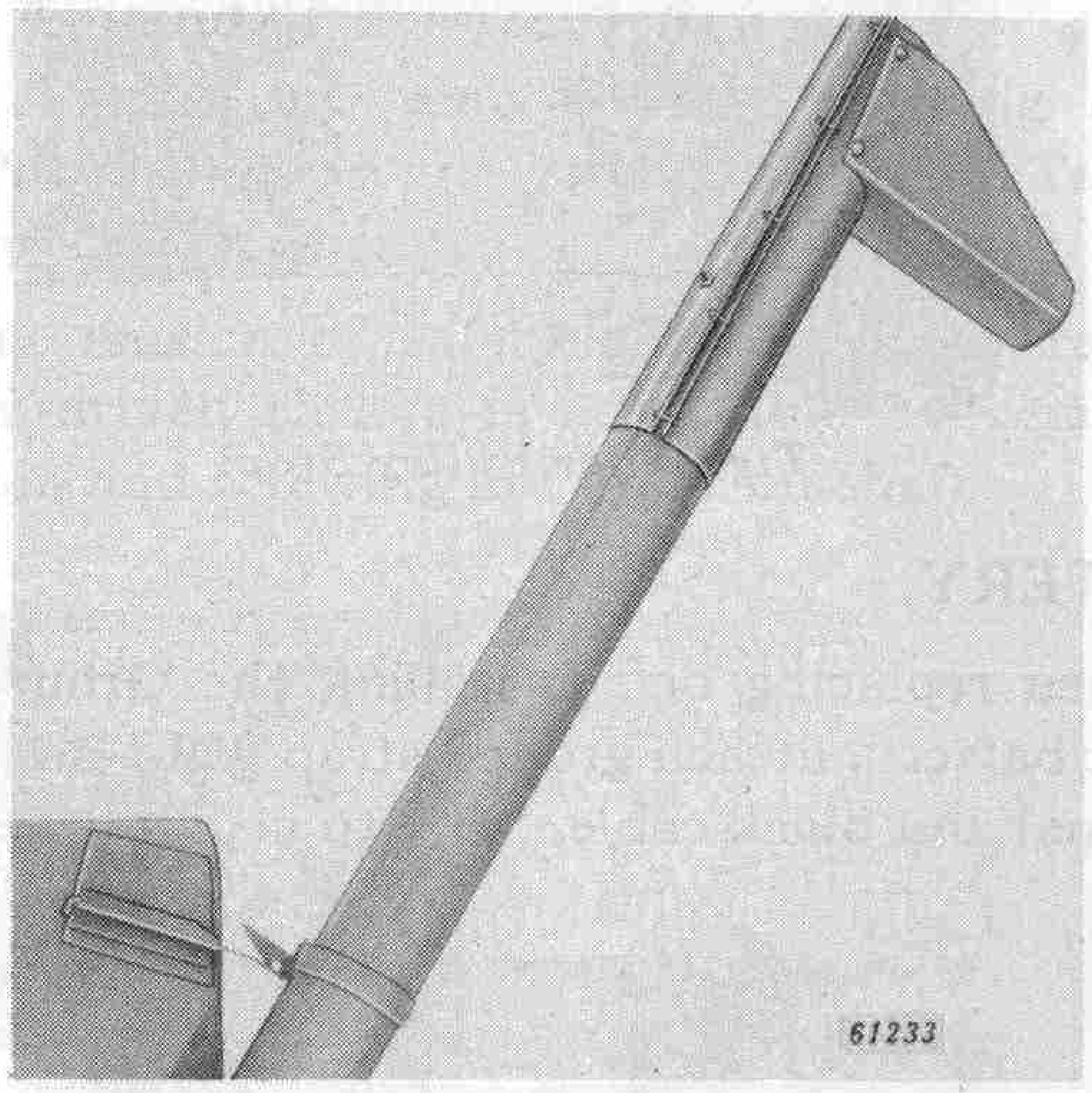
This spout is to be used when the combine is equipped with wagon hitch to provide adequate clearance between the unloading auger and the wagon box. Order shipping package 15541HH.



Long Spout

18-INCH UNLOADING AUGER EXTENSION (SPECIAL EQUIPMENT)

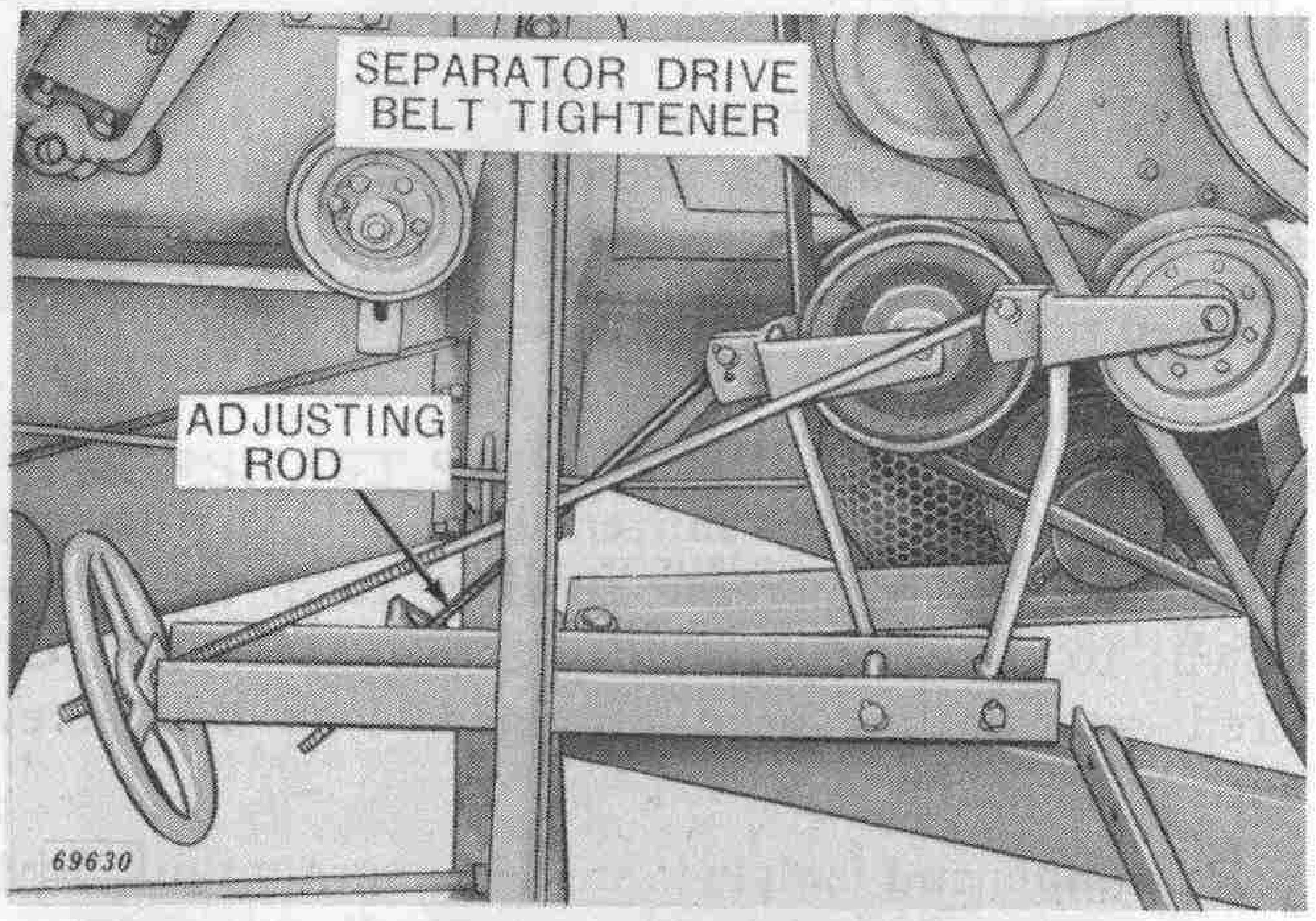
This extension is to be used when grain tank is being unloaded into a truck with high bed sides to provide adequate height so grain will flow into truck. Order shipping package 16033HH.



18-Inch Unloading Auger Extension

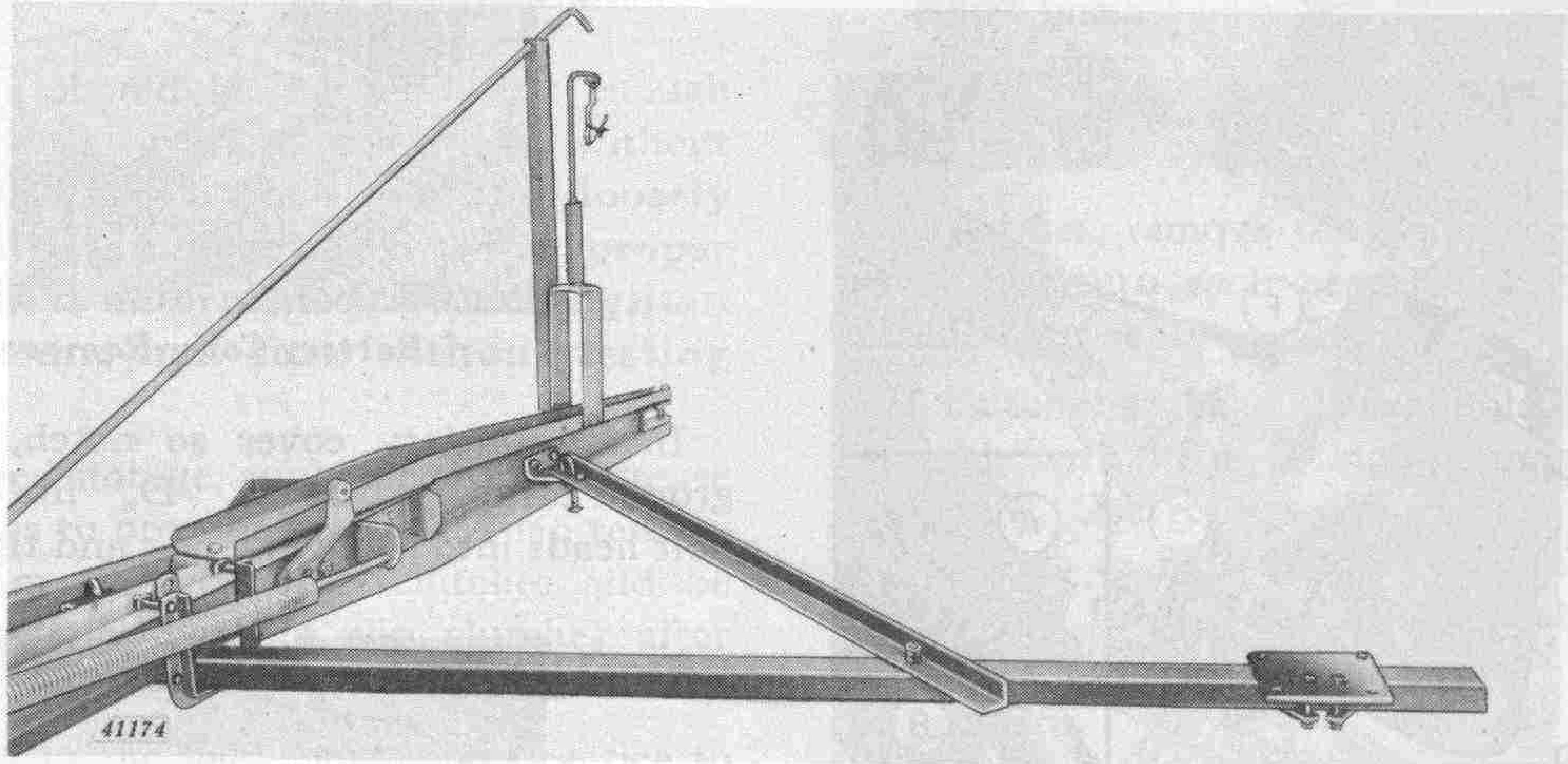
SEPARATOR DRIVE BELT TIGHTENER

The separator drive belt tightener is mounted on the frame of the cylinder drive belt tightener, on the right-hand side of the separator. The tension on the drive belt is adjusted by means of two nuts on the adjusting rod to the rear of bracket. Keep the belt just tight enough so it does not slip.



Separator Drive Belt Tightener

WAGON HITCH (SPECIAL EQUIPMENT)



Wagon Hitch

A wagon hitch is available so the grain tank can be unloaded while combining, if desired.

Order: the following from your John Deere dealer: Shipping package BH10225H.

In conjunction with the wagon hitch, the combine can be equipped with either a remote control gear case or an engine and the long spout for the grain tank unloading auger.

POWERSHAFT, GRAIN TANK DRIVE, AND STANDARD TYPE MAIN DRIVE GEAR CASE

Keep cap screw at "A," securing universal joint to front end of powershaft, tight and wire, "B," wrapped tight around universal fork.

Shims are provided under gear case end caps, "C," for meshing bevel gears and adjusting the tapered roller bearings.

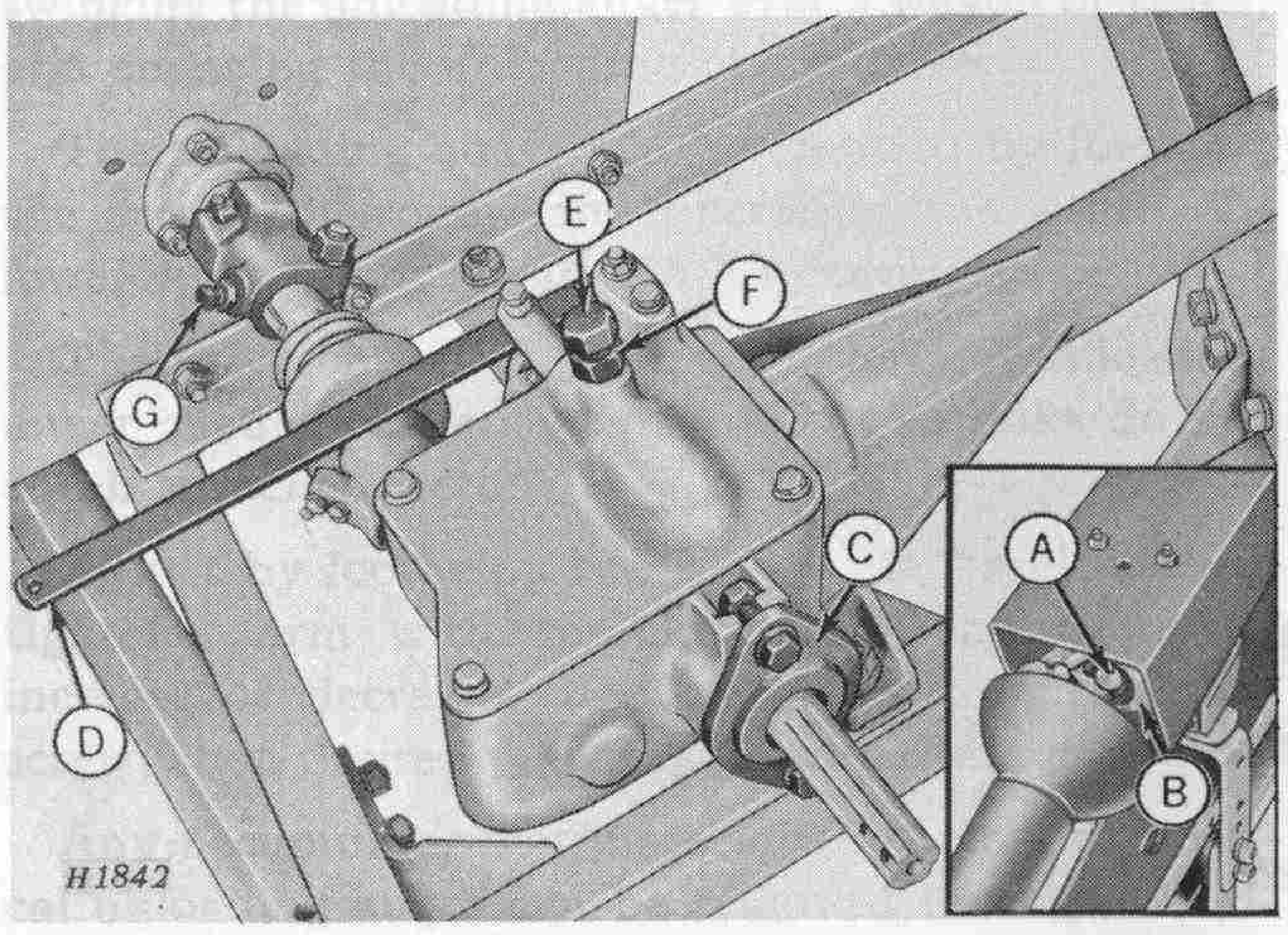
Keep main drive gear case filled with a good grade of SAE Multi-Purpose grease. Flush gear case out and refill with clean grease once each season.

Keep powershaft straight (see pages 12 and 13.)

Grain Tank Combines Only.

Adjust tension on shifter lever, "D," with cap screw, "E." To increase tension, turn cap screw down; to decrease, turn cap screw up. When desired tension has been obtained, lock cap screw with locking nut, "F."

Rear male and female knuckles on grain tank drive should not bottom. Check and, if necessary, loosen set screw, "G," and reset with minimum 1/8-inch clearance laterally.

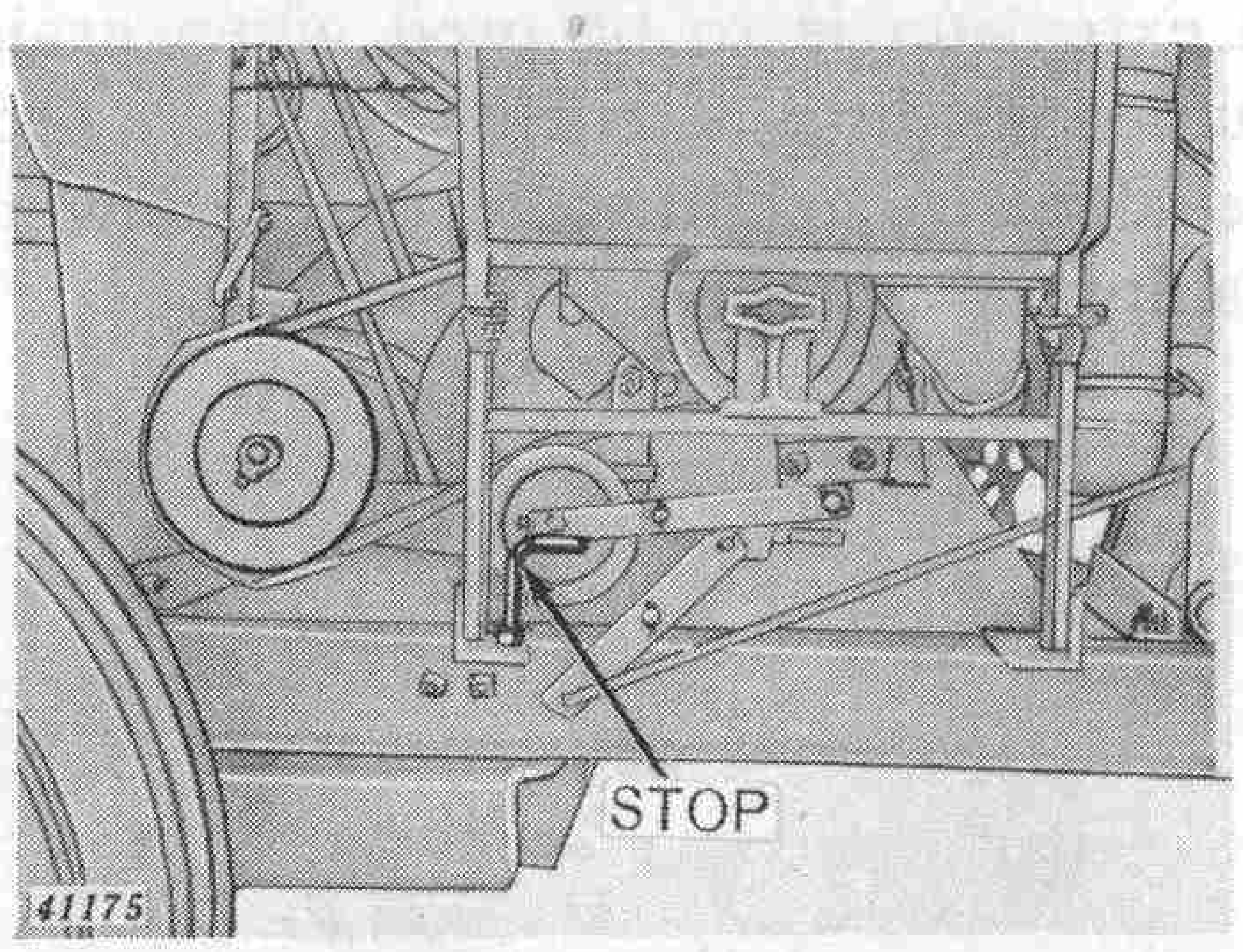


Powershaft, Grain Tank Drive, and Main Drive Gear Case

ENGINE

STOP FOR TIGHTENER PULLEY ON GRAIN TANK UNLOADING AUGER DRIVE.

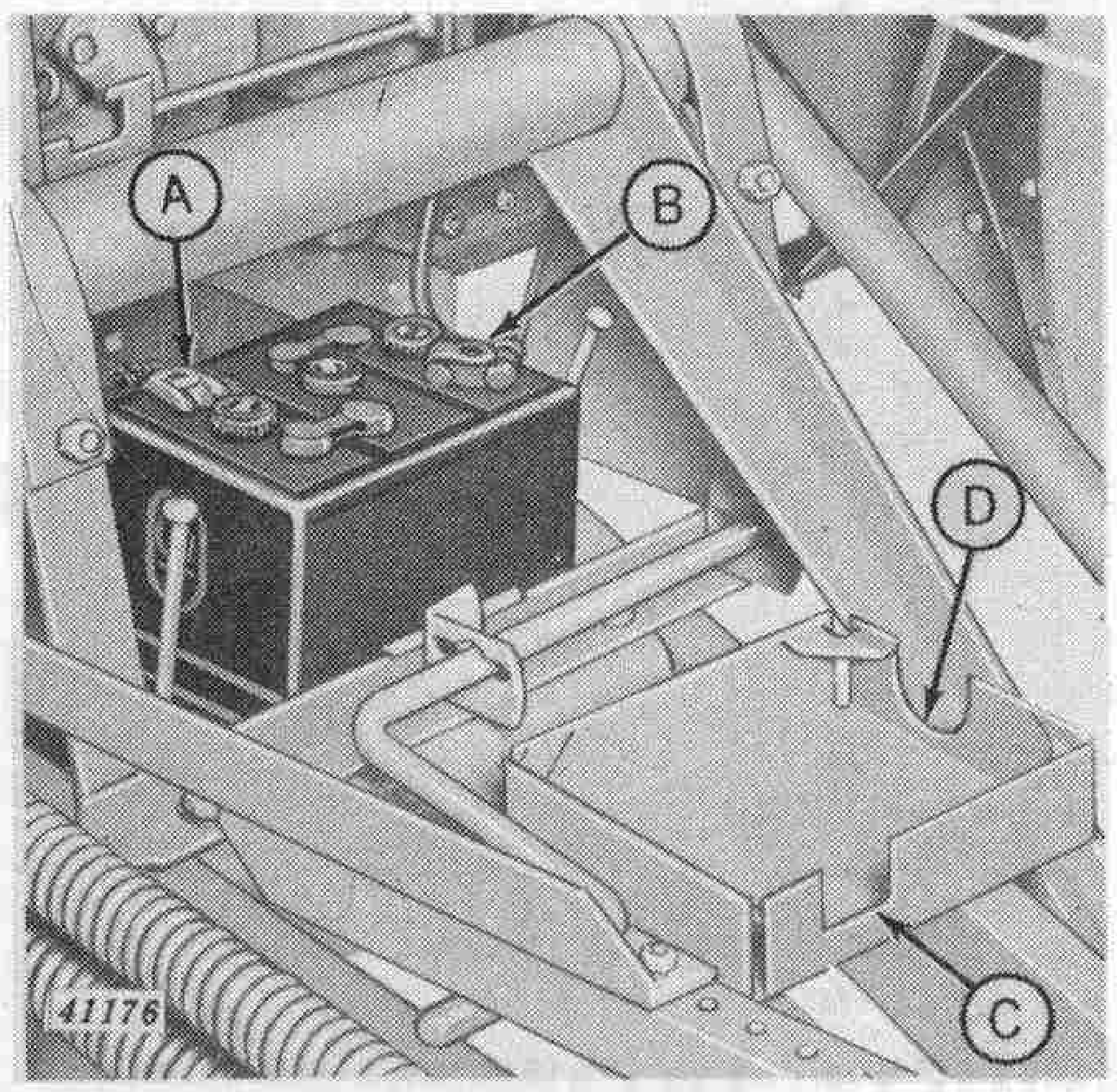
When grain tank unloading auger is disengaged, the tightener pulley should clear the engine main frame angle by 1/8-inch. Adjust stop by loosening nuts on both sides. Tighten nuts after adjustment has been made.



Tightener Pulley Stop

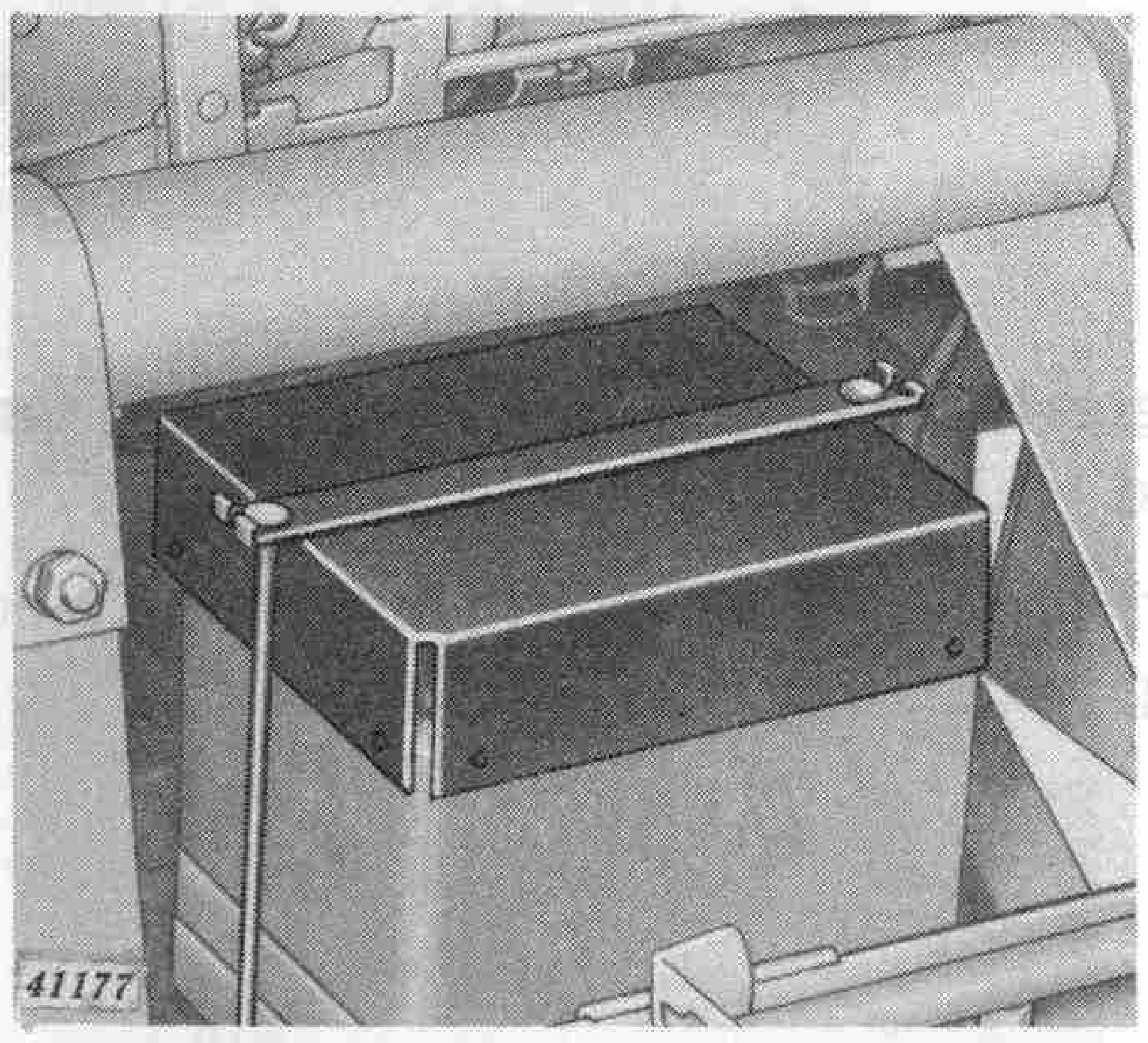
BATTERY.

When replacing or reinstalling the Group No. 1 6-volt battery, attach ground strap, "A," to positive terminal and black cable, "B," to negative terminal.



Battery Cover Removed

Install battery cover so notch, "C," fits over ground strap and notch, "D," fits over cable. Slip bolt heads into place in cover and tighten wing nuts.



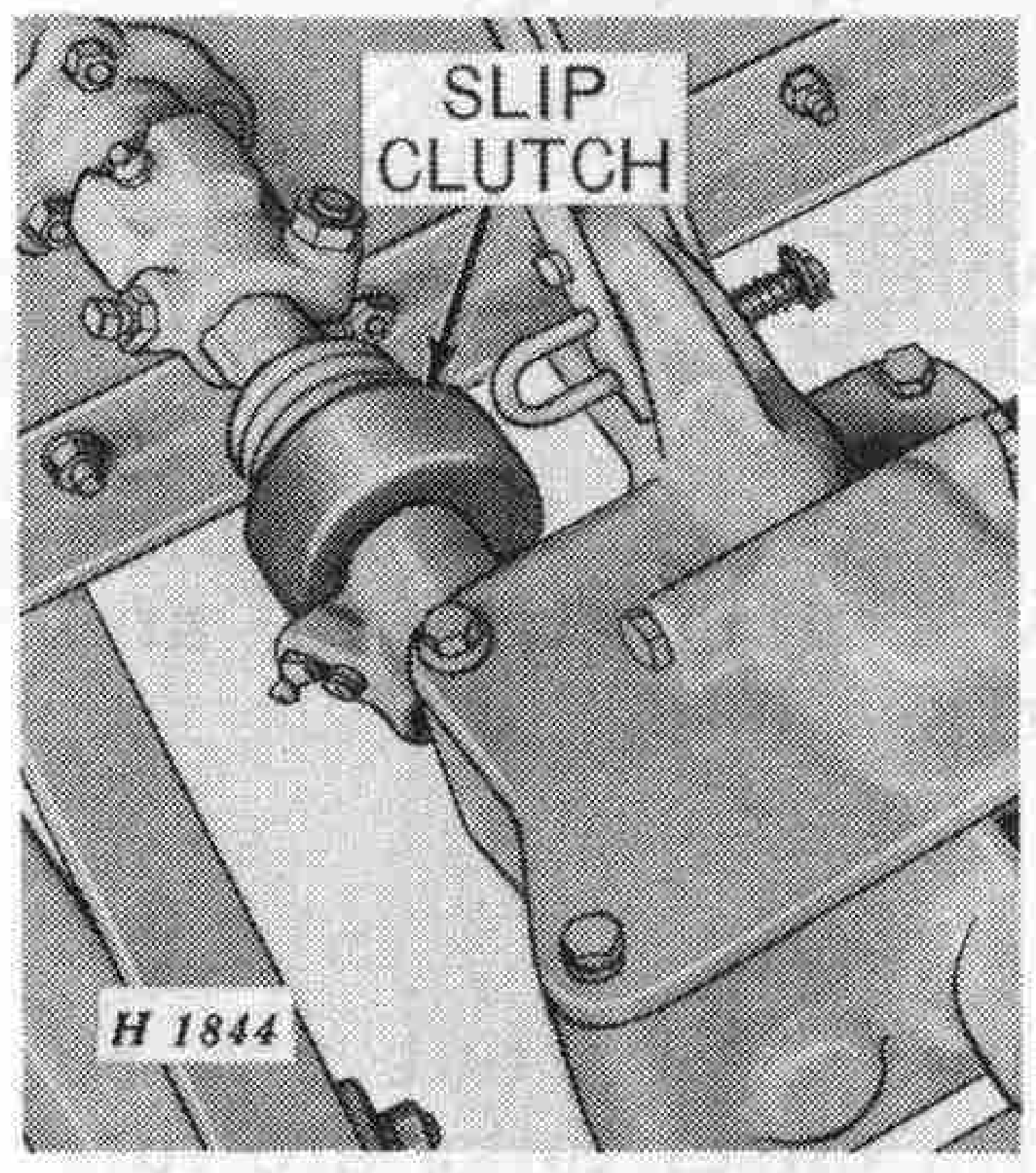
Battery Cover Installed

SAFETY SLIP CLUTCHES

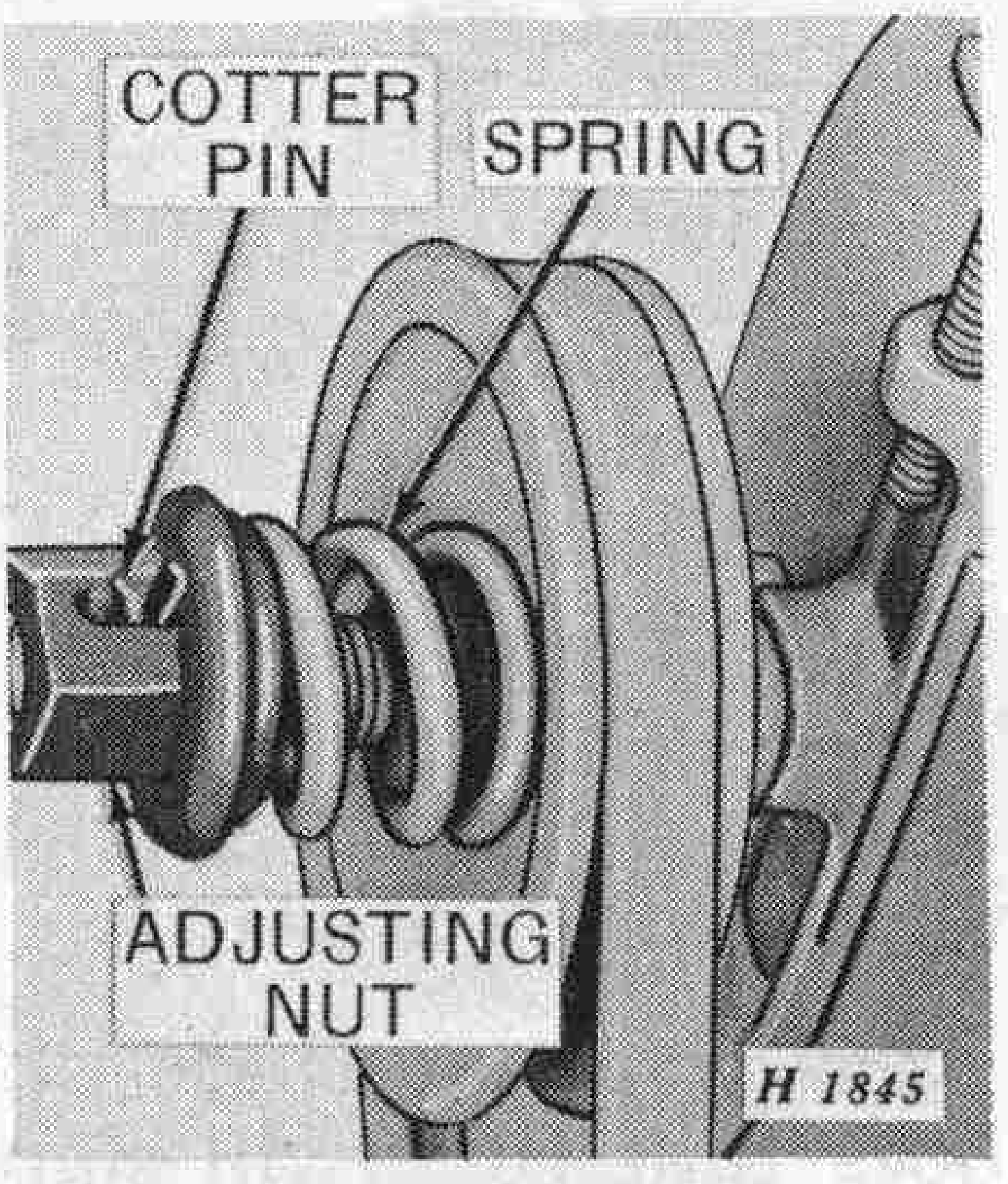
All important drives are protected by durable slip clutches. When clutches slip, stop immediately, determine the cause, and correct. Do not increase tension of safety slip clutches unless it has been determined by careful examination that lack of tension is the cause of slippage.

Slip clutches are used on the following units: Reel, Powershaft, Grain Tank Drive, and Tailings Elevator Driven Sheave.

Spring tension of safety slip clutch on tailings elevator driven sheave is adjustable by removing cotter pin and screwing nut on or off shaft.



Tailings Elevator Driven Sheave



Grain Tank Drive Slip Clutch

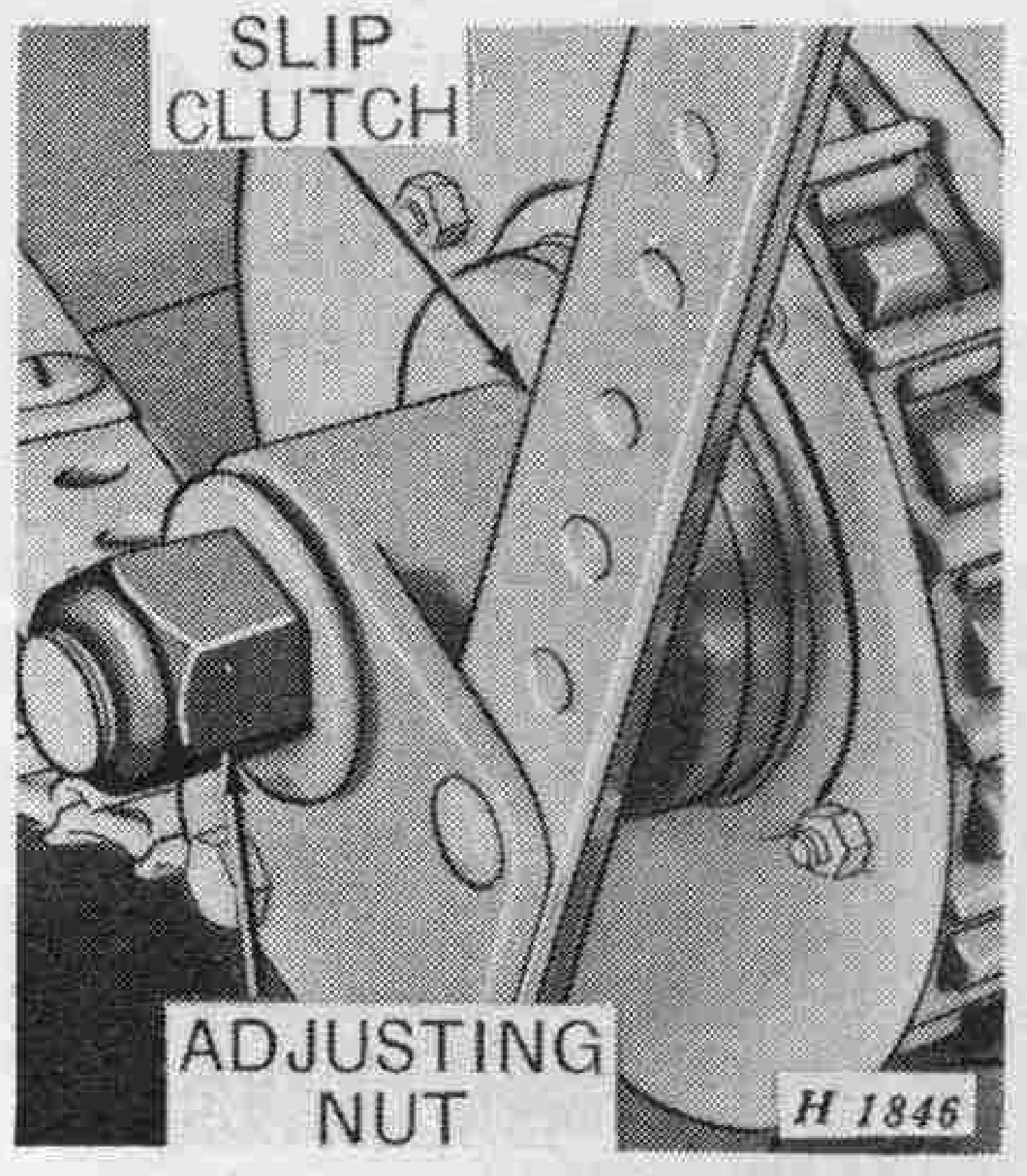
Clutch springs should be set with just enough tension to work in average conditions without slipping. **IMPORTANT: Set slip clutch loosely at first and tighten gradually until proper working tension is determined. Do not tighten nut more than one-half turn without testing adjustment.**

Before prolonged storage, apply a coating of grease to slip clutch jaws to prevent rusting. When removing combine from storage, clean clutches and be sure to put grease in bore of slip clutches after cleaning. Adjust for proper working tension.

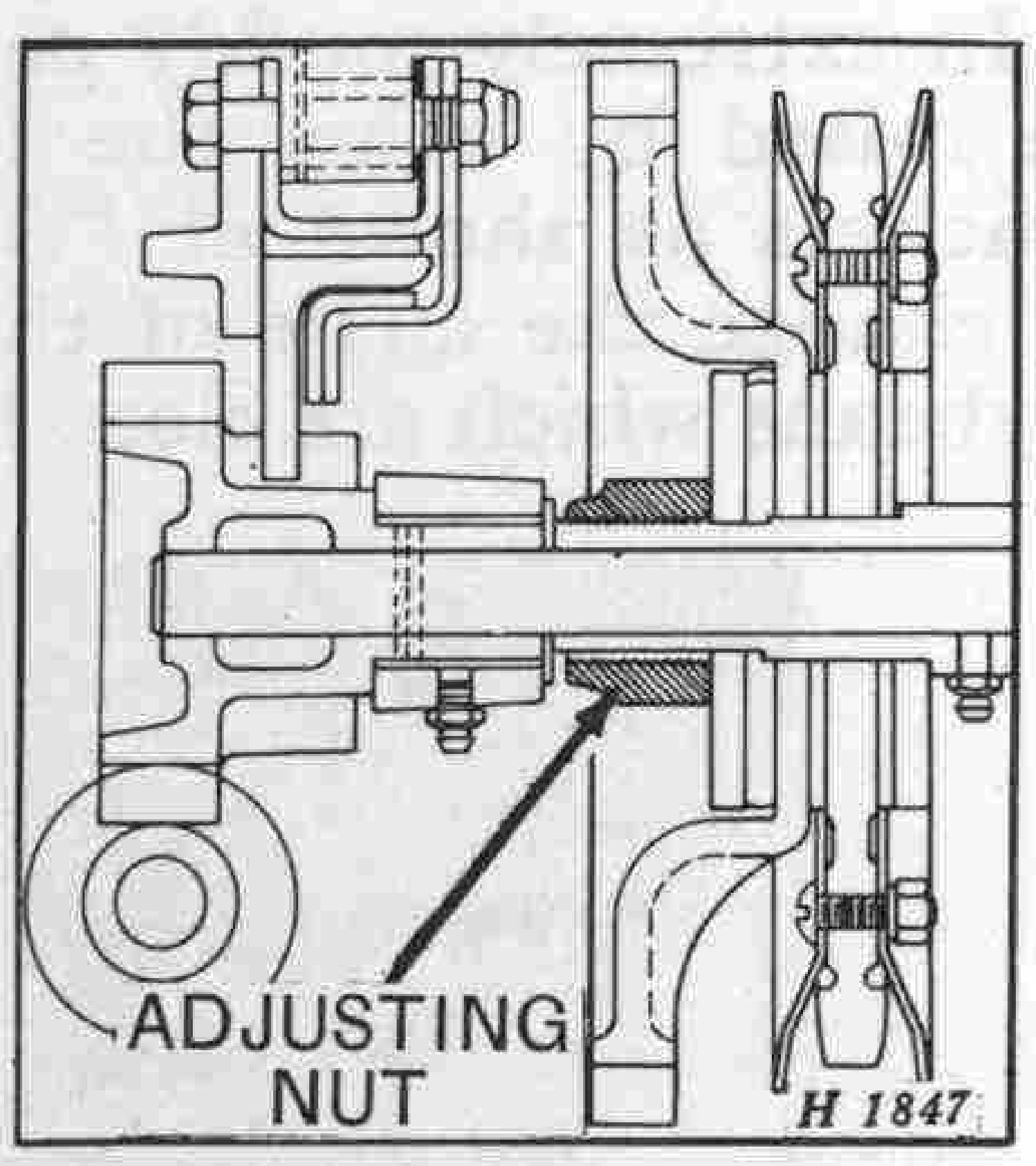
Before starting in the field, it is good practice to slip all the clutches to be sure they are functioning properly.

Reel Slip Clutch.

The reel slip clutch should be tight enough to operate under load without slipping. To check, tighten hand wheel on reel drive sprocket on right-hand main wheel and turn reel by hand. Clutch should slip when a slight pressure is applied to reel slats. Adjust with nut on reel shaft.



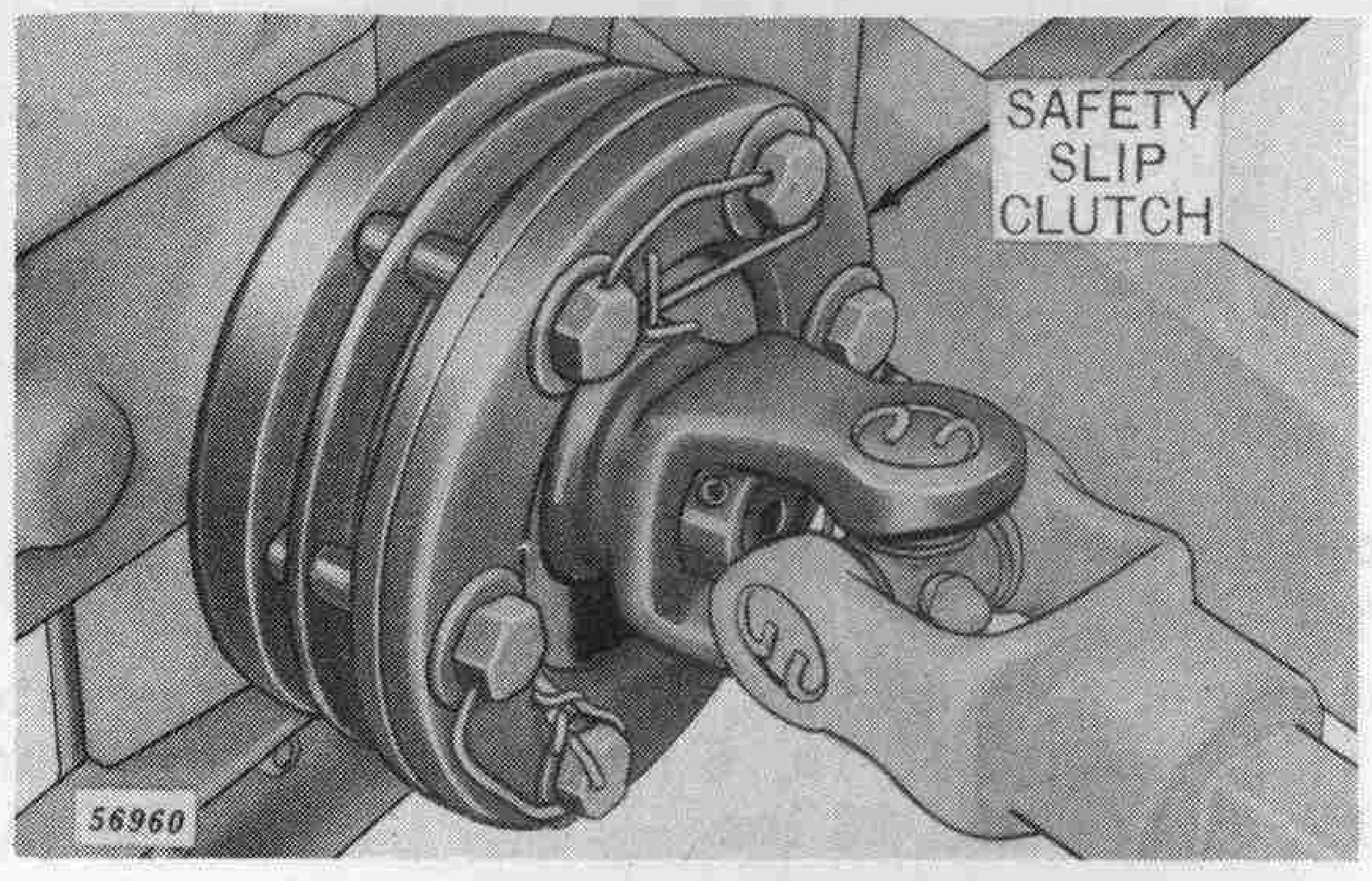
Manual Controlled



Power Controlled

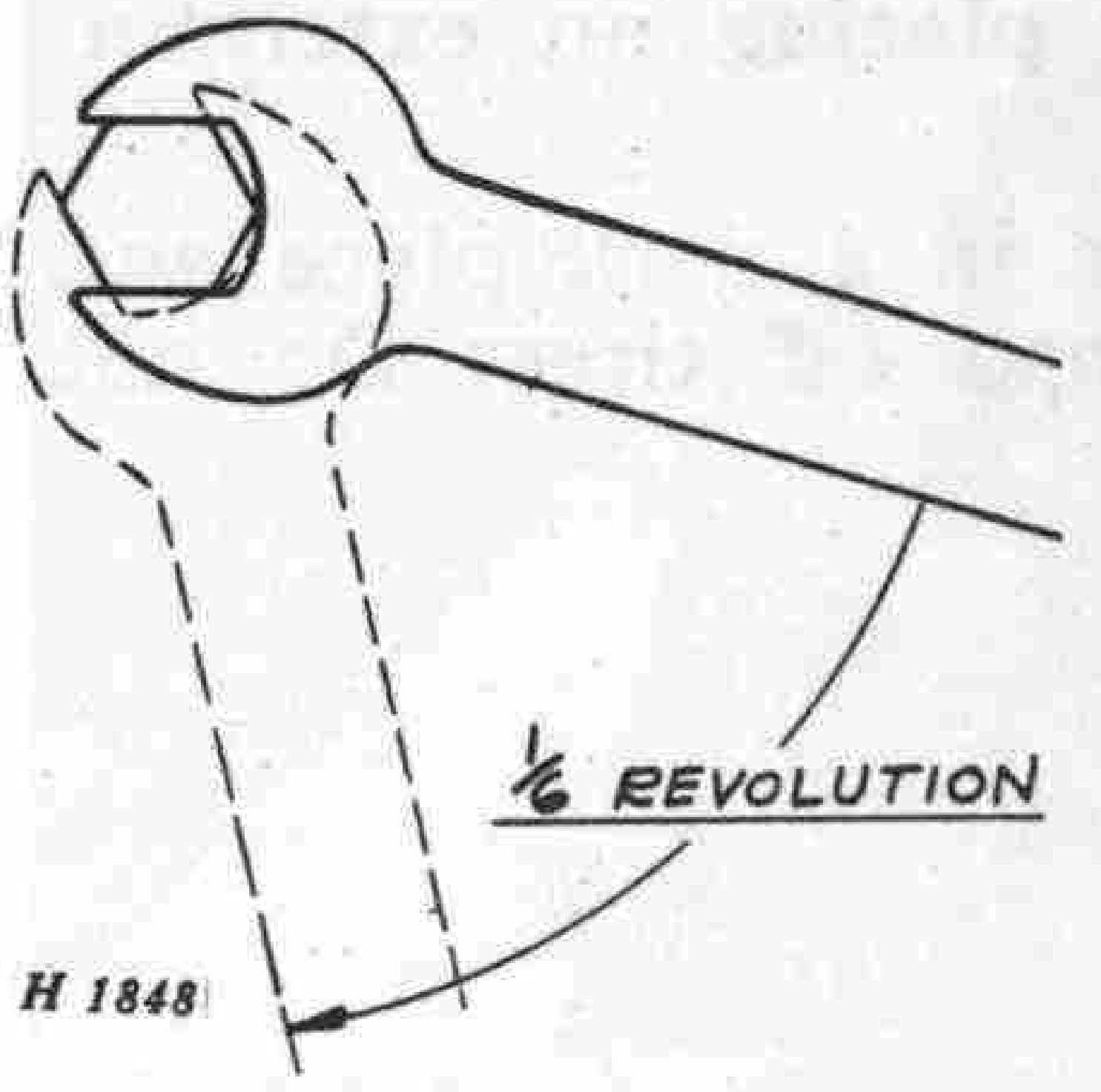
POWERSHAFT SAFETY SLIP CLUTCH.

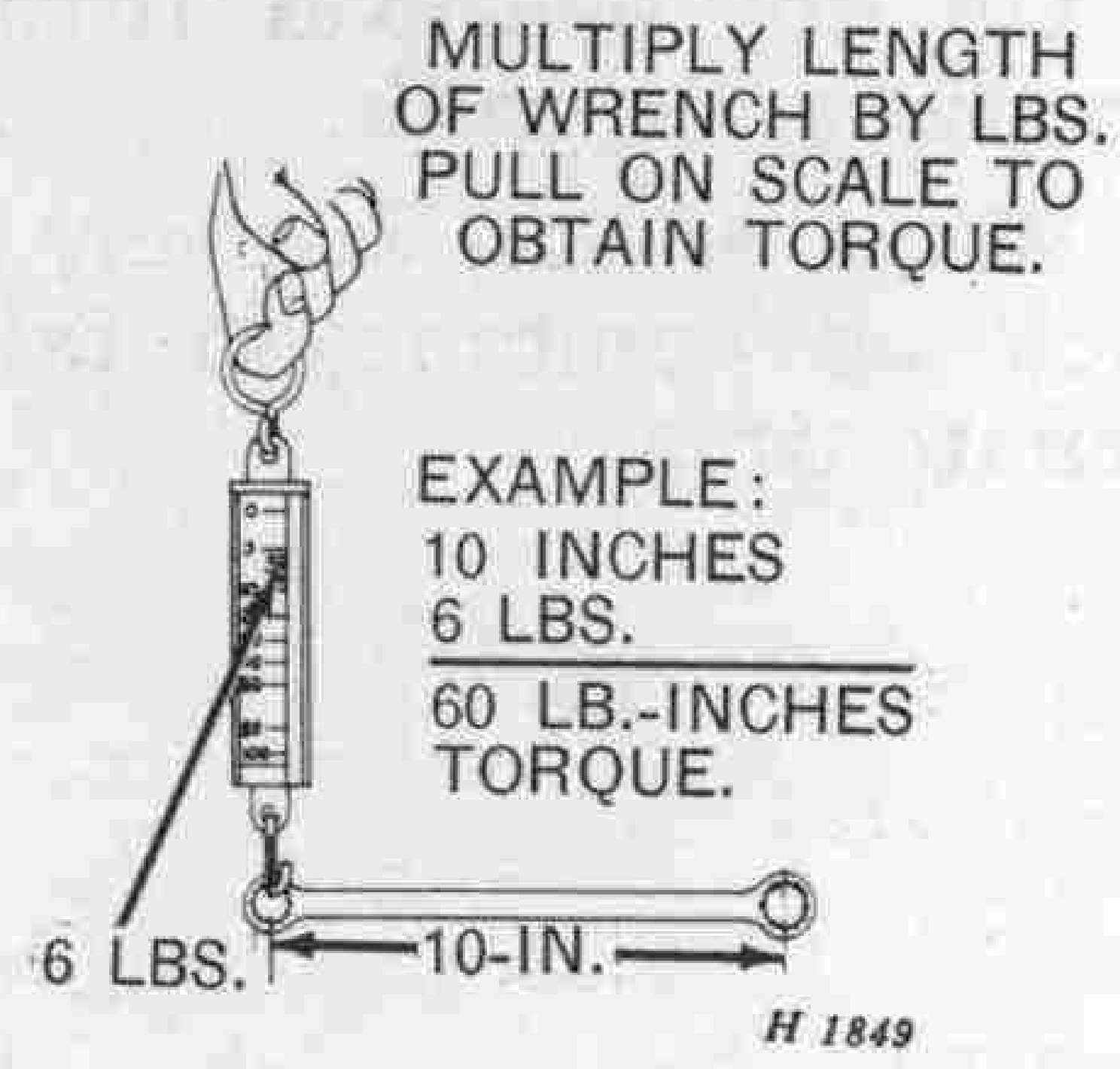
This clutch has been adjusted at the factory and will require no adjustment except for normal wear.



To adjust, remove the wire from the cap screw heads and turn each head 1/6 revolution as illustrated, then replace wire.

If clutch has been disassembled for repairs, reassemble with 55 to 65 inch-pounds torque on each cap screw. Use torque wrench, or use a hand scale and wrench as illustrated. **To insure satisfactory operation, follow the above instructions carefully. Don't guess!**

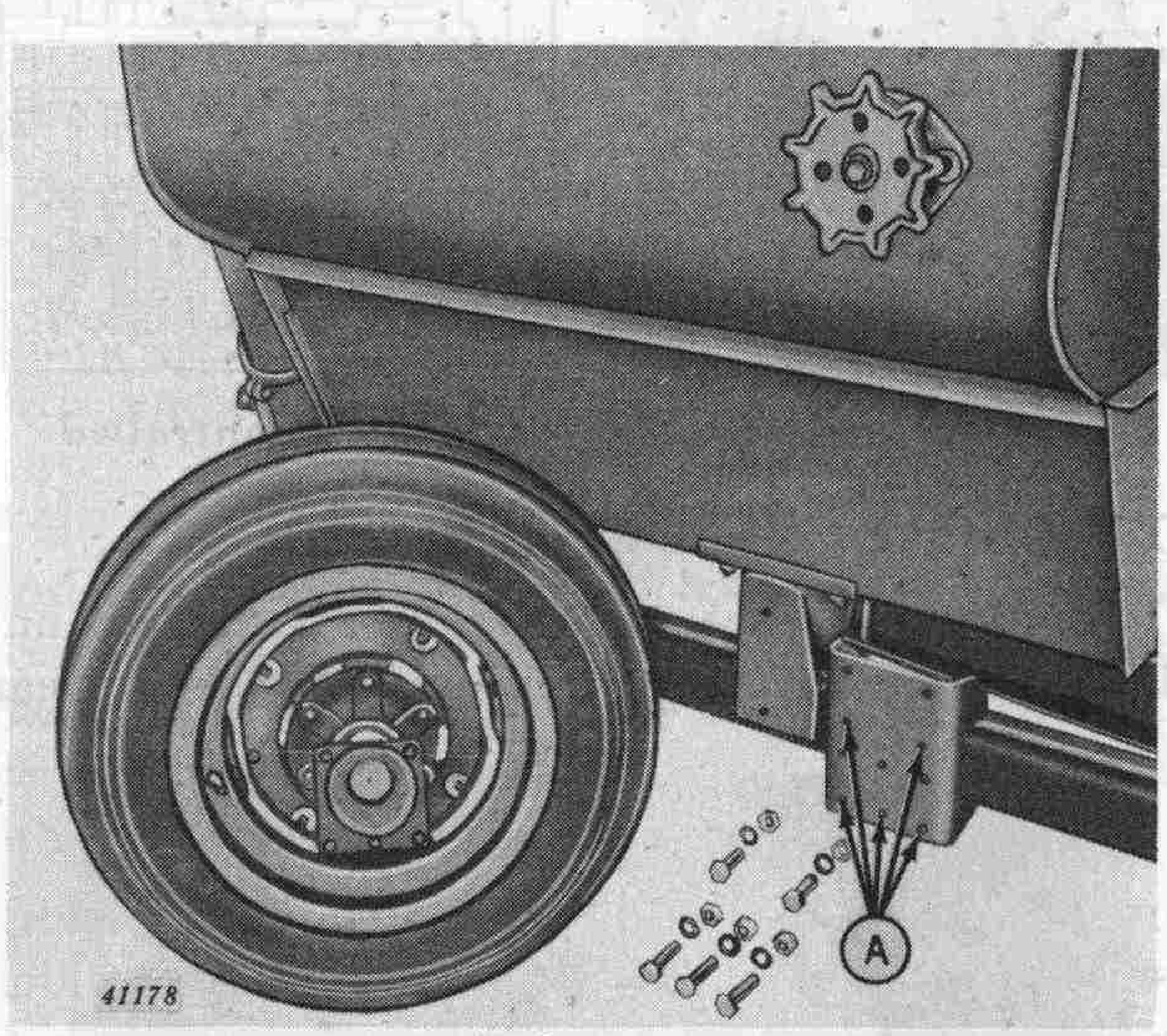



MULTIPLY LENGTH OF WRENCH BY LBS. PULL ON SCALE TO OBTAIN TORQUE.
EXAMPLE:
10 INCHES
6 LBS.
60 LB.-INCHES TORQUE.
6 LBS.
10-IN.
H 1849

WHEELS

Both wheels should be dished out at all times.

In extremely muddy conditions the separator can be raised by using the lower set of holes in axle brackets as shown at "A." This can also be done to change the angle of the cutter bar when cutting soybeans which are close to the ground.



CARE OF PNEUMATIC TIRES

Proper inflation pressure helps prevent damage to tires. Check tire pressure frequently.

The proper pressure for these 7.50-16, 4-ply rated tires is 24 lbs.; 7.50-16, 6-ply rated, 32 lbs.; and 6.50-16, 6-ply rated 28 lbs.

Too little pressure will allow the tire to slip on rim or to buckle the side walls, resulting in torn valve stems, fabric breaks, and uneven tread wear.

Too much pressure causes undue strain on fabric, excessive tread wear, and allows tire to cut in more on wet ground.

Keep valve caps screwed onto valve stems, finger-tight. This will prevent dirt from getting into the valve core.

Avoid stumps, stones, deep ruts, and other tire hazards.

Do not overload tires by placing an extension on the grain tank.

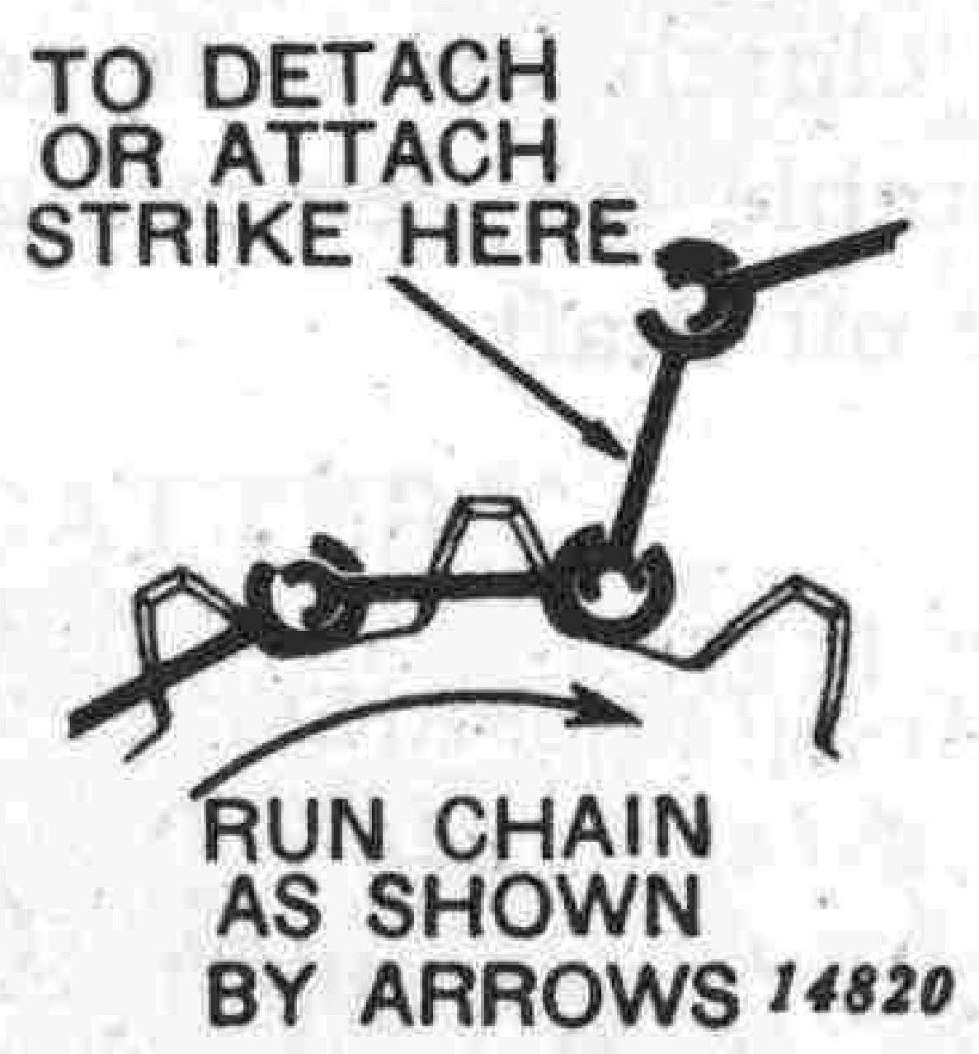
When season is over, store in a dark place and jack up combine to take load off tires. Do not deflate tires.

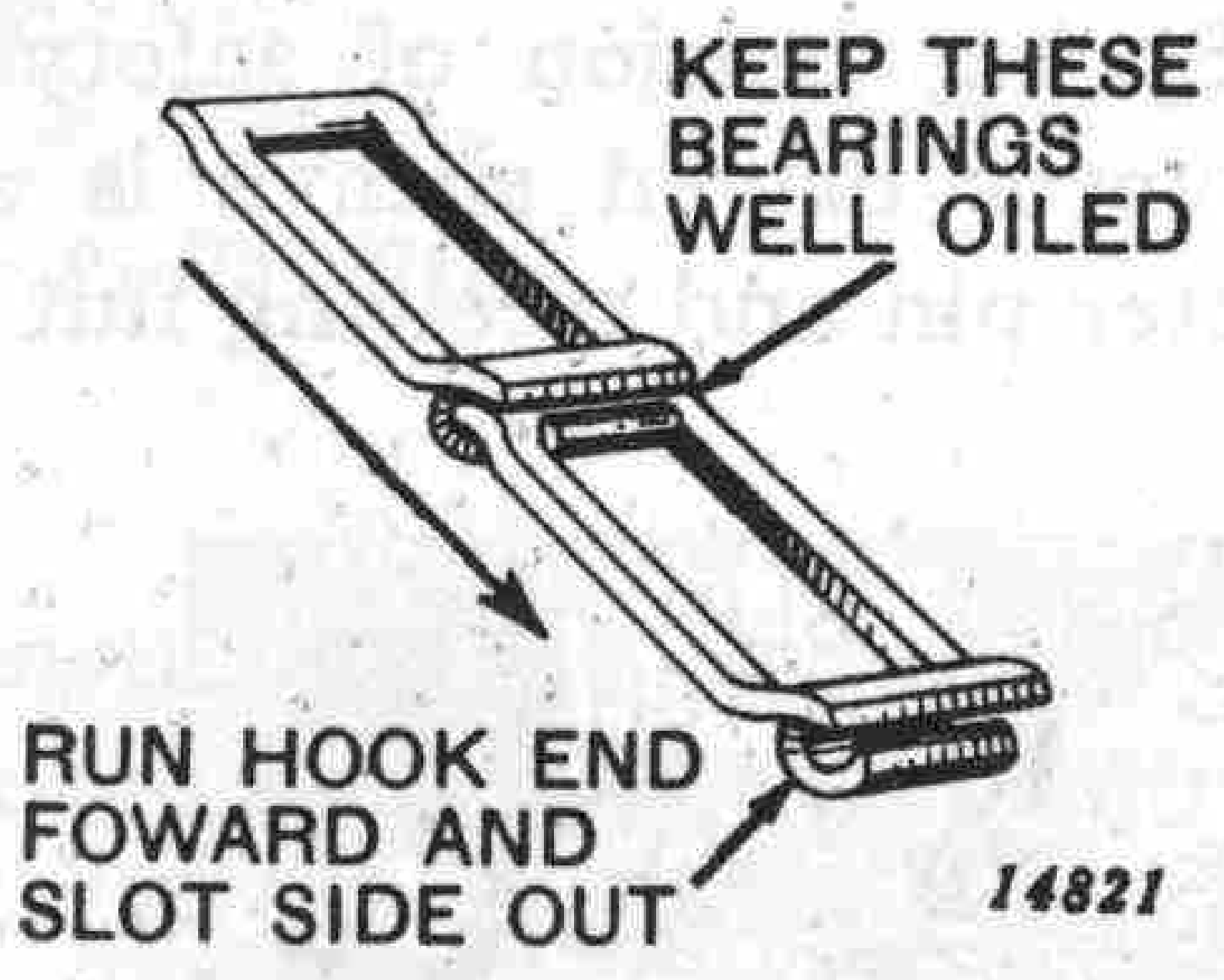
CARE OF CHAINS

All chains are provided with a tightener so chain can be run just tight enough to do the work. If too tight or too loose, chains and sprockets will wear rapidly and breakage will occur.

Detachable Steel Link Chains.

To attach, run hook end of link forward and slot or open side out to run in direction of sprocket rotation.




KEEP THESE BEARINGS WELL OILED
RUN HOOK END FOWARD AND SLOT SIDE OUT
14821

To detach, use tooth of sprocket for backing brace, bend to position shown in illustration, and strike at point indicated by arrow.

Steel Roller Chains.

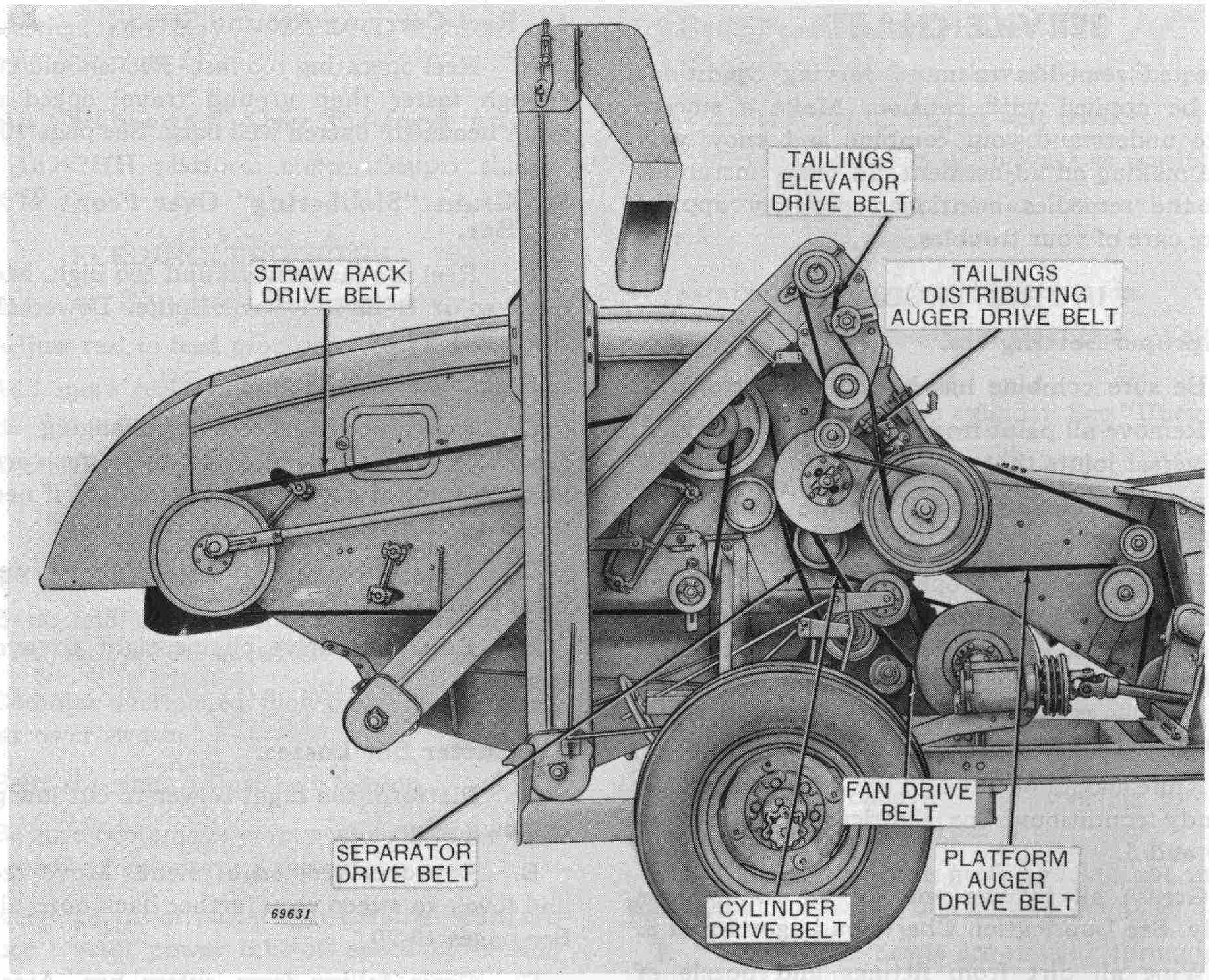
Do not run these chains too tight, but not so loose that they will slap. Extra offset links are furnished in each chain to permit shortening the chain as it wears or stretches.

Sprocket Alignment.

Be certain that all sprockets composing each drive are properly aligned. Drive and driven sprockets may be moved in or out on shafts for proper alignment. Tightener sprockets may be aligned by increasing or decreasing the number of flat washers behind sprocket hub. A sprocket out of alignment will cause the chain to pull to one side, causing rapid wear of chain and sprockets. Inspect sprockets frequently to make sure teeth are not worn enough to cause damage to chain.

Lubrication.

Chains should be lubricated at frequent intervals. A good grade of light engine oil should be used. **CAUTION: Do not oil chains when operating in dry sandy conditions as sand will stick to the oiled chain and act as an abrasive, causing undue wear to chain and sprockets.**


TAILINGS ELEVATOR DRIVE BELT
STRAW RACK DRIVE BELT
TAILINGS DISTRIBUTING AUGER DRIVE BELT
FAN DRIVE BELT
SEPARATOR DRIVE BELT
PLATFORM AUGER DRIVE BELT
CYLINDER DRIVE BELT
69631

CARE OF V-BELTS

When installing a belt, all tighteners should be loosened. Never pry a belt over the edge of a sheave, as the rupture of one or more cords will weaken the belt to such an extent that it will fail prematurely.

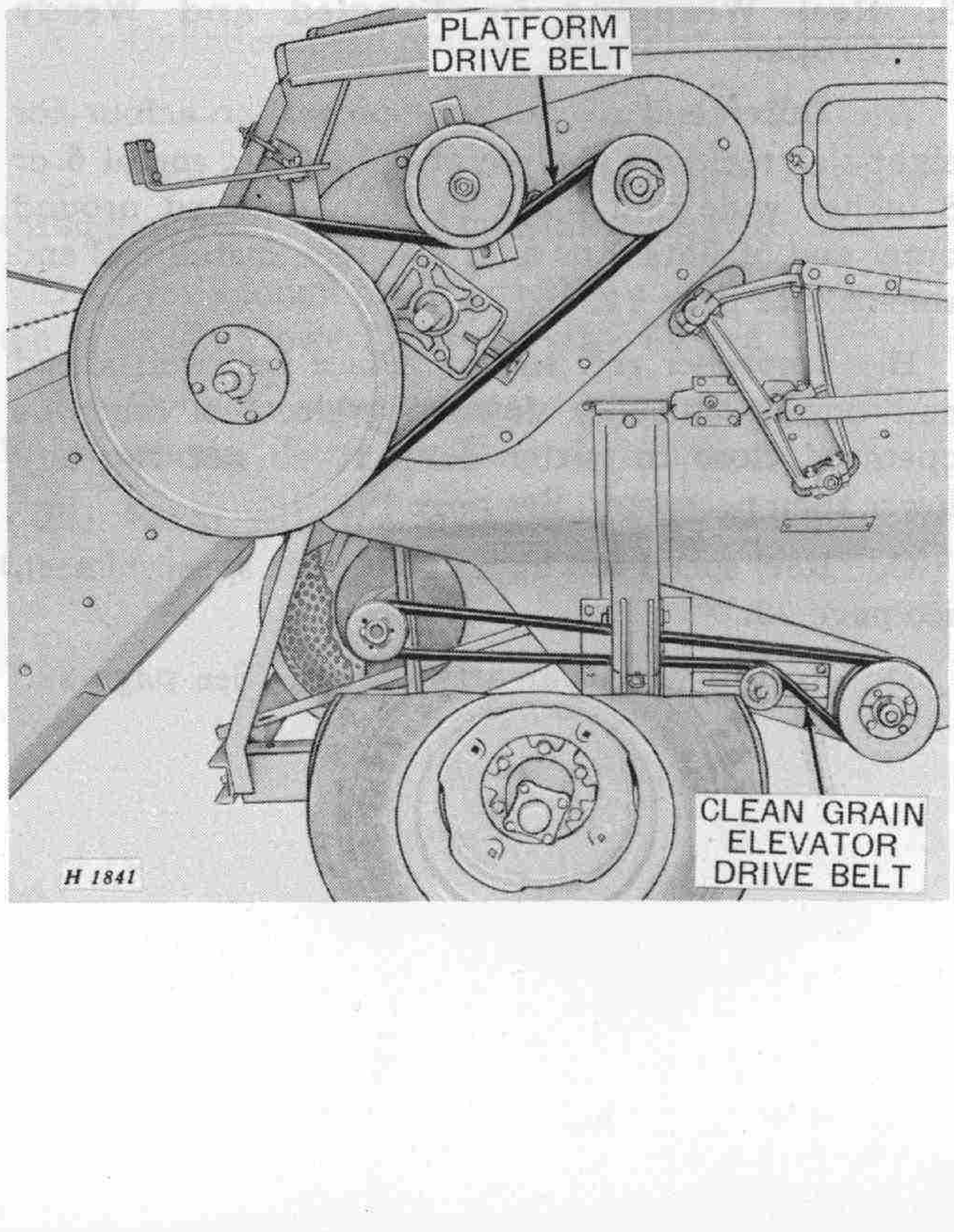
V-belts stretch when new. Check tension frequently for the first few days and promptly take up the initial stretch so belt does not slip. More belts are ruined by lack of tension than by too much tension. If slippage occurs, excessive heating will result and shorten the belt life.

Be careful not to allow grease to remain on a belt. Remove the grease with a rag moistened with a safe solvent. Do not dip belts into a solvent to clean.

The condition of the sheave flanges has a definite bearing on belt life. If they are too narrow or mutilated, the belts cannot give satisfactory service.

A slight raveling of the belt covering does not indicate premature failure. The raveling should be cut off if the covering peels at the lap. A slight application of castor oil on belts that have been exposed to the weather tends to make the covering more pliable and reduces the tendency for it to break away.

At the end of the season, remove the belts and store them in a cool, dry place to prevent damage from the elements.



SERVICE CHART

Suggested remedies to meet varying conditions should be applied with caution. Make a sincere effort to understand your combine and know why you are making an adjustment. In many instances, one of the remedies mentioned properly applied will take care of your troubles.

CUTTING TROUBLES

1. Improper Setting Up.

A. Be sure combine has been set up properly.

B. Remove all paint from bearings, connections, and universal joints that may be binding.

C. Be sure cutting parts operate freely. See page 24.

D. Be sure combine is operating at proper speed and that power plant can maintain operating speed under load. Proper speed is 740 to 760 rpm at beater shaft. See page 36.

2. Improper Lubrication.

A. Knife should be oiled except when working in dry sandy conditions. See Lubrication Charts on pages 4 and 5.

B. Grease all fittings and oil all connections regularly. See Lubrication Charts on pages 4 and 5.

C. Wipe all dirt from fittings and nozzle of grease gun before greasing and replace all missing fittings at once.

3. Reel Wrapping in Tangled and Weedy Crops.

A. Outer end of reel wrapping. For a four- or eight-slat reel, cut a piece of light sheet metal 6 or 8 inches wide and place in form of band around outer end of slats. For a six-slat reel, install reel end shields. See page 21.

B. Improper reel setting. Place reel well ahead and down. In badly downed grain, reel must be operated close to cutter bar but do not run any lower than necessary. See page 19.

C. Reel speed too high. To reduce speed of reel, see page 20.

D. Install weed bar attachment. (See page 29.)

4. Reel Carrying Around Straw.

A. Reel operating too fast. Reel should turn just enough faster than ground travel speed so that grain heads are batted well back. See page 20.

5. Grain "Slobbering" Over Front of Cutter Bar.

A. Reel too far forward and too high. Move reel back so it is directly over knife. Lower the reel. See pages 19-20.

B. Cut as low as possible.

C. Increase reel speed by changing chain on sprockets. See page 20. Add more reel arms and slats. A total of eight slats can be used if necessary. See page 23.

D. Attach belt wipers to reel slats to sweep crop back to platform. See page 22.

E. Keep reel drive chains tight to avoid reel backlash.

6. Cutter Bar Losses.

A. Platform too high. Lower to cut low growing or down crops.

B. Improper reel adjustment. Move reel back and lower to sweep crop farther back onto platform. See pages 19-20.

C. Grain falling from cutter bar. Attach belt wipers to reel slats to sweep crop back from cutter bar. See page 22.

D. Increase number of reel arms and slats. A total of eight slats can be used if necessary. See page 23.

E. Reel shattering heads of grain. Lower reel. Slow down reel speed. See pages 19-20.

F. Cutter bar needs repairing. Replace damaged or worn guard plates, knife sections, guards, and wearing plates. Align guards and tighten loose guard bolts. See pages 24-25.

G. Straighten knife. A bent or twisted knife will not cut.

H. Adjust knife holders so knife works freely, yet provides a shear cut without binding or lost motion of lip and top of guard plate. See page 25.

K. Vertical end play bell crank. Tighten adjusting nut. See page 24.

7. Grain "Slobbering" Over Platform Auger.

Order 15962HH platform auger stripper shield. See page 29.

FEEDING TROUBLES

1. Uneven or Bunched Feeding to Cylinder.

A. Adjust reel to feed properly.

B. Add more reel arms and slats. Use eight if necessary. See page 23.

C. Attach belt wipers to reel slats. See page 22.

THRESHING TROUBLES

1. Slugging of Cylinder.

A. Basic and cylinder speeds not correct. See page 30. Adjust cylinder speed for crop.

B. Combine overloaded. Slow down travel speed. Cut a narrower swath.

C. Belts slipping. Adjust belt tension.

D. Be sure combine is empty when starting and is up to speed when entering the cut.

E. Keep tractor or power unit throttle open. Do not reduce tractor power take-off speed by closing throttle.

F. Cylinder and concave spacing too close. Raise cylinder; set cylinder to permit the volume of straw and stems to pass through cylinder concave. See page 30.

G. Reel not properly adjusted. Adjust to crop condition. See page 19.

H. Use the proper number of reel slats. A tall crop requires fewer reel slats; a short crop requires more.

I. Use proper equipment on reel. See pages 21 to 23 inclusive.

J. Reel speed incorrect. Run chain on proper sprockets on reel drive shaft. See page 20.

2. Back Feeding at Cylinder.

A. Cylinder speed too slow. Adjust. See page 30.

B. Belts slipping. Adjust belt tension.

C. Set cylinder as close to grate as possible.

D. Stripper bar set too far from cylinder. See page 34.

4. Grain Not Threshed from Heads.

A. Crop not in condition to thresh. Wait until ripe.

B. Uneven feeding to cylinder. See "Uneven and Bunched Feeding."

C. Slugs entering cylinder. See "Slugging of Cylinder."

D. Cylinder speed too slow. See page 30. Check drive belt tension.

E. Cylinder rasp-bars bent. Straighten.

F. Not enough material entering combine to provide proper threshing action. Cut crop lower. Travel faster.

G. Cylinder-concave grate spacing too wide. Lower cylinder. See page 33.

H. Cylinder-concave grate spacing not uniform throughout full width of combine. See page 33.

I. Unthreshed heads are passing through grate openings. Install as many snap-on concave cover plates as are required. See page 35.

4. Cracked Grain.

A. Cylinder speed toofast. Readjust. See page 31.

B. Tailings too heavy. See "Excessive Tailings "

C. Cylinder concave spacing not uniform throughout full width of machine. See page 33.

D. Not enough straw entering combine to cushion grain. Cut lower. Increase travel speed.

E. Cylinder-concave grate spacing too close. Raise cylinder. See page 31.

F. Slugs entering cylinder. See "Slugging of Cylinder."

SERVICE CHART—Continued

G. Uneven feeding to cylinder. See "Uneven or Bunched Feeding to Cylinder."

H. Cylinder rasp-bars damaged by rocks. Straighten.

I. Dented auger housing. Straighten.

J. Bent auger shafts. Straighten.

5. Beater Wrapping.

A. Crop not in condition to thresh. Wait until ripe.

B. Uneven speed. Tractor or power unit must be in good condition.

C. Drive belt slipping. Adjust belt tension.

D. Maintain beater speed of 740 to 760 rpm.

6. Material Lodging on Straw Rack.

A. Be sure rack drive belt is not slipping.

B. Material catching on deflector curtain rod. Bend rod center support clip up.

C. Maintain 740 to 760 rpm speed at beater shaft. See page 36.

7. Loss of Grain Over Rack.

A. Insufficient speed. Maintain speed of 740 to 760 rpm at beater shaft. See page 36.

B. Rack opening clogged. Clean out.

C. Openings in concave and concave extension clogged. Clean out.

D. Combine overloaded. Reduce travel speed. Raise cutter bar as far as possible.

E. Point of hitch too high. Adjust tractor hitch to lower point of hitch.

F. Damaged, missing, or improperly installed rubber extension to grain return pan at rear of straw rack. Replace damaged or missing extension. See that extension is installed so it is on top of conveyor chain slats.

If conveyor chain is turned backwards, this extension will be carried backwards and fall from its proper position.

G. Install front curtain. Order Shipping Package 15932HH.

CLEANING TROUBLES

1. Foreign Material in Cleaned Grain.

A. Insufficient fan air blast. Increase blast by opening valves at ends of fan housing or by changing speed of fan. See page 38.

B. Blast not directed properly. Adjust windboard lever to direct air blast to front of shoe. See page 39.

C. Chaffer sieve lips open too far. Close lip openings to a point just below where tailings are excessive. See page 40.

D. Too much trash and green stems falling through adjustable sieve openings. Use a round hole sieve in lower position if adjustable sieve cannot be set properly. See page 42.

E. Cylinder chopping straw up, overloading shoe. Reduce cylinder speed. See page 31. Raise cylinder. See page 33.

F. Combine overloaded. Reduce travel speed. Cut as high as possible.

G. Maintain speed of 740 to 760 rpm at beater shaft. See page 36.

2. Shoe Overloaded.

A. Straw broken up too much. Reduce cylinder speed. See page 31. Increase cylinder-concave spacing. See page 33.

B. Increase fan air blast, open valves at ends of fan housing. Use faster fan speed. See pages 38-39.

C. Adjust windboard lever to place air blast farther forward. See page 39.

D. Open lips on adjustable chaffer and sieve. See page 40.

E. Combine overloaded. Reduce travel speed. Raise cutter bar.

F. Raise tailboard to deflect air blast through chaffer and sieve. See page 41.

G. Material cut too fine with reduced cylinder speed and increased cylinder-concave grate spacing. Install one or more snap-on concave cover plates. See page 35.

H. Point of hitch carried too low. Adjust drawbar on tractor to raise point of hitch.

3. Grain Going "Over" Shoe.

A. Chaffer and sieve overloaded. Open lips of chaffer and sieve. See page 40.

B. Grain blown over. Reduce air blast by closing valves at ends of fan housing or by slowing speed of fan. See page 40.

C. Grain riding over with chaff. Increase air blast by opening valves at ends of fan housing or increasing fan speed. See pages 38 and 39.

D. Point of hitch carried too high. Adjust tractor drawbar to lower point of hitch.

E. Straw broken up too much. Reduce cylinder speed. Increase cylinder-concave spacing. See page 31. Install snap-on concave cover plates. Use one or more cover plates as required. See page 35.

4. Excessive Tailings.

A. Open lips of adjustable chaffer and sieve. See page 40.

B. Straw broken up too much. Reduce cylinder speed. Increase cylinder-concave grate clearance. See page 31.

C. Increase fan air blast by opening valves at ends of fan housing or by increasing fan speed. See pages 38 and 39.

D. Adjust windboard lever to throw air blast to carry out some of the light material that falls onto sieve. See page 39.

F. Replace tailings finger bar with a no-choke chaffer extension or cover finger bar with square mesh screen. See page 43.

G. Install one or more snap-on concave cover plates. See page 35.

H. Point of hitch too low. Adjust tractor drawbar to carry point of hitch higher.

CARE BETWEEN SEASONS

WHEN THE SEASON IS OVER

1. Shelter the combine in a dry place.

2. Curtain inside of combine should be removed, cleaned, and stored in a clean, dry place out of reach of mice and rats.

3. Remove drive belts, clean, and wrap in burlap. Store in a cool, dark place.

4. Clean combine thoroughly inside and out. Chaff and dirt will draw moisture, rot wood parts, and rust the steel.

5. Clean out augers and elevators. Leave doors open at bottom end of elevators.

6. Clean the adjustable chaffer and sieve and grain pan at front of shoe. Brush beards from straw rack.

7. Clean out bottom of grain tank and unloading augers. Lower unloading auger to ground and operate combine. Also open clean-out door in auger drive housing and operate combine. Remove wooden plug from drain hole in grain tank.

9. Lubricate the combine thoroughly. See pages 4 and 5.

10. Repaint parts from which paint was worn.

11. Support platform with blocks to level it.

12. Block up combine, taking load off tires. Do not deflate tires.

13. List the repairs that will be needed and order them early. Dealer can give better service and once parts are received they can be installed during spare time—with no delay at harvest time.

14. Grease slip clutches to prevent rusting.

AT THE BEGINNING OF NEXT SEASON

1. Inflate tires to proper pressure. See page 50.

2. If combine has been blocked up, remove blocking.

3. Replace curtain.

4. Replace drive belts. See page 51.

5. Close doors at bottom of elevators and unloading auger.

6. Replace wooden plug in drain hole in grain tank.

7. **Review this Operator's Manual.**

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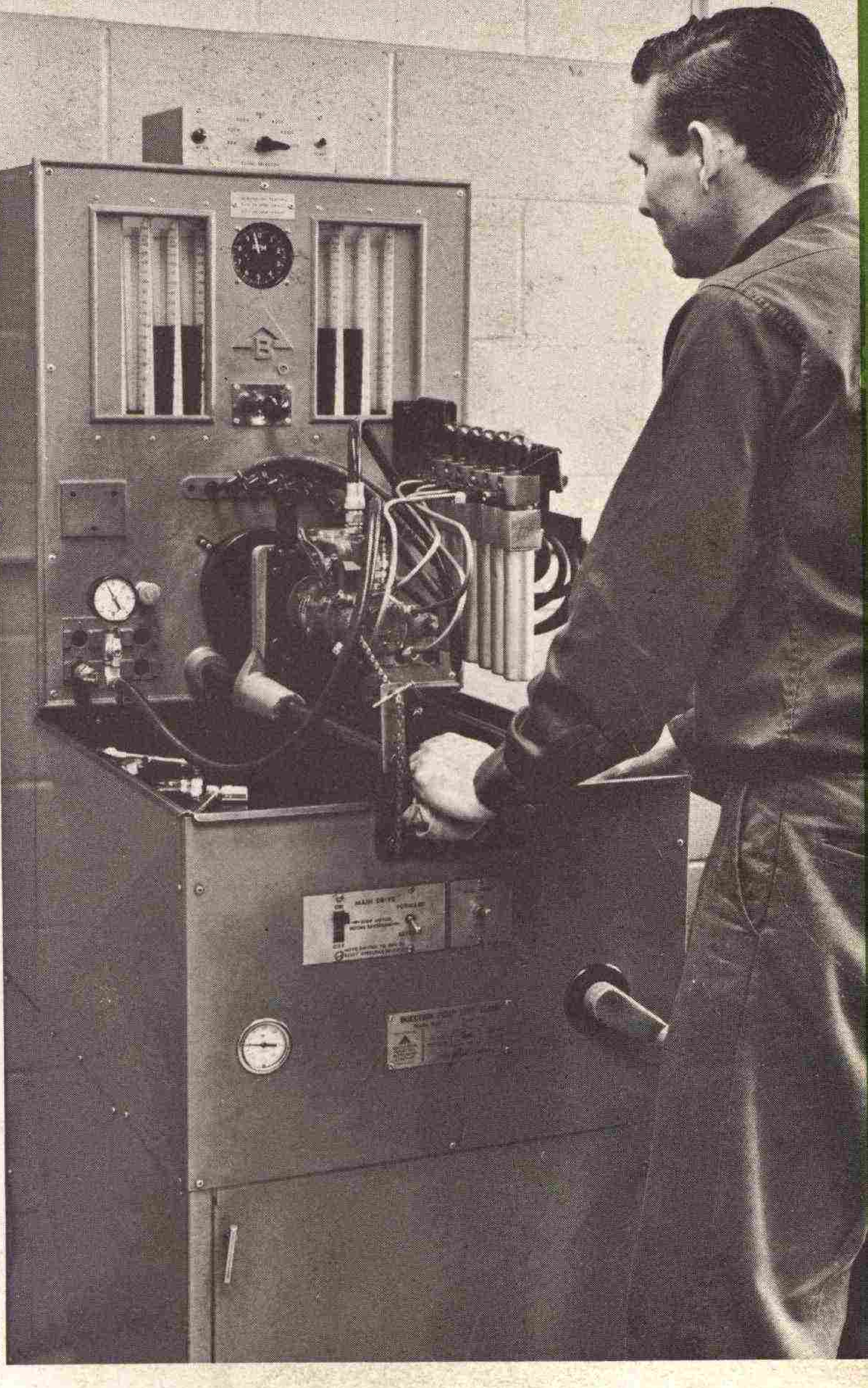

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